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ABSTRACT

Volume Two of a three volume set of the Biomedical and Behavioral Research Scientists study presents tables of data which were required for the study's development by the National Research Council. Data from these tables were obtained from the Association of American Medical Colleges, the American Dental Association, the American Medical Association, the Bureau of the Census, the National Science Foundation, the Department of Education's National Center for Education Statistics, the National Research Council, the Alcohol, Drug Abuse, and Mental Health Administration, and several National Institutes of Health units. The tables include three summary tables showing current trends in supply and demand indicators for the Clinical Sciences, Biomedical Science Ph.D.s, and Behavioral Science Ph.D.s. Also included are 71 detailed tables concerning each science in various areas including enrollment figures, employment trends, R and D expenditures, and degrees awarded. (GLR)

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BIOMEDICAL AND BEHAVIORAL RESEARCH SCIENTISTS: THEIR TRAINING AND SUPPLY

Volume II: Statistical Tables

Committee on Biomedical and Behavioral Research Personnel

Office of Scientific and Engineering Personnel
National Research Council

in collaboration with the
Institute of Medicine

U.S. DEPARTMENT OF EDUCATION
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This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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BIOMEDICAL AND BEHAVIORAL RESEARCH SCIENTISTS: THEIR TRAINING AND SUPPLY

Volume II: Statistical Tables

Foreword

In 1988 the National Institutes of Health Planning and Policy Research Branch tasked Quantum Research Corporation to review and update a series of statistical tables required for the National Research Council's 1989 study of biomedical and behavioral personnel and training needs. These tables had originally been published in the National Research Council's 1985 report on *Personnel Needs and Training for Biomedical and Behavioral Research.*

The resulting statistical tables are provided in this volume. Data for these tables were obtained from the Association of American Medical Colleges, the American Dental Association, the American Medical Association, the Bureau of the Census, the National Science Foundation, the Department of Education's National Center for Education Statistics, the National Research Council, the Alcohol, Drug Abuse, and Mental Health Administration, and several National Institutes of Health units. When necessary, special computer summaries were run against NIH database files, such as the Consolidated Grant Applicant File (CGAF) and the Trainee and Fellow File (TFF), to secure the needed information.

There are two sets of tables derived from the AAMC Medical School Faculty Roster database: A1.-A3. and A21.-A25. The first set was tabulated from the 1987 file by AAMC staff to extend the time series of A1.-A3.; the latter set was tabulated from the 1988 file by QRC staff for NIH/PPRB to extend the time series *Updated Trends and Some Observations About Medical School Faculties.* Differences between the 1987 file and the updated 1988 file as well as differences in the definitions needed to extend the two time series, have resulted in the tabulation of slightly different numbers of faculty.

These statistical tables are maintained at the NIH (PPRB), in computerized form as a series of Microsoft Excel spreadsheets with an associated table retrieval subsystem. All seventy-one detailed tables, as well as the three summary tables, are stored on a single high-density 3.5" diskette. The tables will be updated annually, and available at the NIH (PPRB).

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SUMMARY TABLE 1. Current Trends in Supply/Demand Indicators in the Clinical Sciences

	Fiscal Year											Annual Growth Rate	Latest Annual Change	Average Annual Change
	1977	1978	1979	1980	1981	1982	1983 1/	1984	1985	1986	1987			
1. SUPPLY INDICATORS (New Entrants):														
a. Professional doctorates participating in NIH training grants and fellowships 2/	2,203	1,879	1,780	1,906	1,938	2,026	2,108	2,184	2,265	2,162	n/a	-0.2%	-4.5%	-5
b. M.D. degrees awarded	13,614	14,391	14,966	15,135	15,673	15,985	15,801	16,369	16,321	15,979	15,818	1.5%	-1.0%	220
2. DEMAND INDICATORS:														
a. Expenditures for clinical R & D in medical schools (1972 $, mil.)	$268	$282	$273	$296	$288	$295	$315	$349	$389	$420	$444	5.2%	5.7%	$18
b. Professional service income in medical schools (1972 $, mil.)	$391	$406	$441	$493	$526	$612	$740	$806	$957	$990	$1,121	11.1%	13.2%	$73
c. Total revenue (all sources), (1972 $, mil.)	$2,781	$2,839	$2,965	$3,195	$3,293	$3,488	$3,793	$4,033	$4,367	$4,681	$5,141	6.3%	9.8%	$236
d. Budgeted vacancies in medical schools:														
(1) Clinical departments	1,865	2,000	2,100	2,279	2,231	2,264	2,270	2,402	2,572	2,345	2,510	3.0%	7.0%	65
(2) Basic science departments	638	697	721	776	656	668	671	705	801	757	785	2.1%	3.7%	15
e. Clinical faculty/student ratio 3/	0.311	0.322	0.323	0.334	0.331	0.341	0.346	0.349	0.354	0.368	0.380	2.0%	3.3%	0.007
3. LABOR FORCE														
a. M.D.s primarily engaged in research 4/	9,786	11,437	14,515	15,377	17,901	16,743	18,535	22,945	23,268	17,847	16,586	5.4%	-7.1%	680
b. Full-time faculty in clinical departments	30,349	32,622	34,057	36,665	37,716	40,148	41,938	43,443	45,007	47,193	48,834	4.9%	3.5%	1,849
c. NIH research grants awarded to M.D.s: 5/														
(1) Number of competing grants	1,645	1,926	2,060	1,772	1,729	1,600	1,768	2,013	1,971	1,925	n/a	1.8%	-2.3%	31
(2) % of total competing grants	37%	33%	31%	33%	31%	29%	29%	32%	28%	27%	n/a	-3.4%	-3.6%	-1.1%
d. M.D. applicants for NIH research grants:														
(1) Number of competing applicants	4,184	4,302	4,239	4,182	4,301	4,281	4,313	4,621	4,865	5,080	n/a	2.2%	4.4%	100
(2) % of total competing applicants	34%	33%	31%	31%	30%	28%	28%	29%	28%	28%	n/a	-2.1%	0.0%	-0.7%
e. M.D. success rate:														
(1) M.D. awards/M.D. applicants	36%	41%	45%	40%	39%	35%	39%	41%	39%	36%	n/a	0.0%	-7.7%	0.0%
(2) M.D. awardees/all awardees	37%	33%	32%	34%	32%	29%	30%	32%	29%	28%	n/a	-3.0%	-3.4%	-1.0%
4. ENROLLMENTS:														
a. Medical students	58,266	60,424	62,582	64,020	65,412	66,484	66,886	67,437	67,086	66,607	65,918	1.2%	-1.0%	765
b. Residents and clinical fellows 6/	44,795	46,444	50,188	52,491	52,871	57,504	59,138	60,442	63,507	60,875	61,539	3.2%	1.1%	1,674
c. Total	103,061	106,868	112,770	116,511	118,283	123,988	126,024	127,879	130,593	127,482	127,457	2.1%	0.0%	2,440

(See footnotes and item sources on the following page)

SUMMARY TABLE 1. Footnotes and Sources

Footnotes

1/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983.

2/ Includes Fogarty International Center programs.

3/ Ratio of full-time clinical faculty to a 4-yrear weighted average of total enrollments of medical students, residents and clinical fellows(WS), where (WS)t = 1/6(St + 2St-1 + 2St - 2 + St-3).

4/ There is some question about the interpretation of these data since they include many trainees in graduate medical programs. 1984 data are previously unpublished; AMA reports them to be accurate to within 100 persons".

5/ Data for M.D.s do NOT exclude those who may also have a Ph.D. degree. As a result, the sum of percent M.D. awardees and percent Ph.D. awardees (Summary Table 2), can be greater than 100%.

6/ The residents and clinical fellows reported here include only those in accredited programs affiliated with medical schools.

Sources

Item

1a. Data were extracted from the NIH Trainee and Fellow File (TFF); post-professional doctorates with activated awards were selected. FY is fiscal year of maximum time on duty.
1b. From Appendix Table A4., Total M.D. Graduates. Annual tabulations by the AAMC from the Medical School Faculty Roster database.

2a. From Appendix Table A7., Total Estimated Clinical R&D (1972 dollars). See Appendix Table A7 for description of method for estimating clinical R&D expenditures from AAMC annual tabulations of total R&D expenditures by medical schools, and for the implicit GNP price deflator for computing 1972 dollars.
2b. From Appendix Table A8., Total Professional Service Income (1972 dollars). Annual tabulations by the AAMC.
2c. From Appendix Table A11-2., Total Revenue, All Schools (1972 dollars). Journal of the American Medical Association, annual education issues.
2d. From Appendix Table A5., Clinical Sciences Departments and Basic Science Departments. Journal of the American Medical Association, annual education issues.
2e. From Appendix Table A3., which was computed from Tables A1. and A2. All data are from the AAMC; students represent a 4-year weighted average of total medical school enrollments.

3a. From Appendix Table A6., Research. Data are from the AMA's publication "Physician Characteristics and Distribution in the U.S." 1984 data were previously unpublished, see Appendix Table A6.
3b. From Appendix Table A2., Full-time, All Schools, Clinical Departments. Annual tabulations by the AAMC from the Medical School Faculty Roster database.
3c. Data were extracted from the NIH Consolidated Grant Applicant File (CGAF). Research grants were defined as K, M, P, R, and U activity codes; successful new and competing applications by persons with M.D. or M.D. - equivalent degrees were selected. All grants awarded and grants awards to M.D.s were summed by year; M.D. grants / all grants were then calculated.
3d. Data were derived from the same population as in item 3c. This item represents persons (applicants) while item 3c. represents grants. M.D. and M.D. - equivalent applicants were identified and summed for each year. Percent of total competing applicants was then calculated.
3e. Data were derived from the same population as in item 3c. Awards refer to grants, applicants and awardees refer to persons.

4a. From Appendix Table A1., Medical Students, All Schools. Annual tabulations by the AAMC.
4b. From Appendix Table A1., computed sum of Intern & Residents and Clinical Fellows, All Schools. Annual tabulations by the AAMC.
4c. From Appendix Table A1., Total Enrollment, All Schools. Sum of Medical Students, Interns & Residents, and Clinical Fellows; from the AAMC.

SUMMARY TABLE 2. Current Trends in Supply/Demand Indicators for Biomedical Science Ph.D.s

	Fiscal Year											Annual Growth Rate	Latest Annual Change
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987		
1. SUPPLY INDICATORS (New Entrants):													
a. Ph.D. production	3,465	3,518	3,644	3,823	3,846	3,960	3,788	3,902	3,707	3,864	3,969	1.4%	2.7%
b. % of Ph.D.s without specific employment prospects at graduation	7.2%	6.0%	5.2%	4.8%	5.5%	5.4%	6.8%	5.3%	5.7%	5.9%	5.9%	-2.0%	0.0%
c. Postdoctoral appointments (SDR adjusted)	6,312	n/a	7,268	n/a	8,026	n/a	7,827	n/a	8,364	n/a	8,172	2.6%	-1.1%
d. Postdoctoral appointments (GSESP survey)	6,055	6,364	n/a	6,622	6,782	7,330	7,350	7,926	8,309	8,738	9,273	4.4%	6.1%
e. B.A. degrees awarded	51,783	49,701	47,717	45,106	42,297	40,750	38,322	37,115	37,364	37,597	37,284	-3.2%	-0.8%
2. DEMAND INDICATORS:													
a. National expenditures for health-related R&D (1972 $, bil.)	$3.93	$4.12	$4.31	$4.45	$4.46	$4.58	$4.93	$5.38	$5.81	$6.24	$6.87	5.7%	10.1%
b. Biomedical science R&D expenditures in colleges and universities (1972 $, bil.)	$1.27	$1.34	$1.35	$1.42	$1.49	$1.52	$1.57	$1.68	$1.83	$2.00	$2.17	5.5%	8.5%
c. NIH research grant expenditures (1972 $, bil.)	$1.01	$1.08	$1.18	$1.21	$1.19	$1.16	$1.25	$1.38	$1.56	$1.58	$1.80	5.9%	13.9%
d. Ph.D. faculty/student ratio 1/	0.154	n/a	0.168	n/a	0.184	n/a	0.184	n/a	n/a	n/a	n/a	3.0%	0.0%
3. LABOR FORCE 2/													
a. Total	55,031	n/a	62,332	n/a	68,806	n/a	71,423	n/a	79,515	n/a	85,339	4.5%	3.7%
b. Academic (excl. postdoctorates)	30,384	n/a	33,566	n/a	36,482	n/a	36,963	n/a	41,032	n/a	43,025	3.5%	2.4%
c. Industry	6,893	n/a	8,455	n/a	9,928	n/a	11,819	n/a	13,706	n/a	15,928	8.7%	8.1%
d. Government	4,568	n/a	5,080	n/a	5,398	n/a	5,988	n/a	6,479	n/a	7,049	4.4%	4.4%
e. Hospitals/clinics	2,297	n/a	2,726	n/a	2,799	n/a	2,946	n/a	3,307	n/a	3,629	4.7%	4.9%
f. Nonprofit	1,543	n/a	1,858	n/a	2,088	n/a	2,102	n/a	2,460	n/a	2,651	5.6%	3.9%
g. Self-employed	862	n/a	1,185	n/a	1,857	n/a	1,910	n/a	2,254	n/a	2,634	11.8%	8.4%
h. Other (incl. postdoctorates and FFRDC laboratories)	7,687	n/a	8,786	n/a	9,487	n/a	8,743	n/a	9,449	n/a	9,518	2.2%	0.4%
i. Unemployed and seeking	797	n/a	676	n/a	767	n/a	952	n/a	828	n/a	905	1.3%	4.6%
4. NIH GRANTS 3/													
a. NIH research grants awarded to Ph.D.s:													
(1) Number of competing grants	2825	3937	4506	3616	3622	3763	4021	4224	4910	5037	n/a	6.6%	2.6%
(2) % of total competing grants	64%	68%	69%	68%	65%	67%	66%	66%	69%	72%	n/a	1.3%	4.3%
b. Ph.D. applicants for NIH research grants:													
(1) Number of competing applicants	8,228	9,001	9,462	9,171	9,736	10,876	10,617	11,006	12,369	12,830	n/a	5.1%	3.7%
(2) % of total competing applicants	67%	68%	69%	69%	67%	70%	68%	69%	70%	70%	n/a	0.5%	0.0%
c. Ph.D success rate:													
(1) Ph.D. awards/Ph.D. applicants	32%	41%	44%	37%	36%	33%	36%	36%	37%	37%	n/a	1.6%	0.0%
(2) Ph.D. awardees/all awardees	65%	69%	70%	68%	67%	69%	68%	67%	70%	73%	n/a	1.3%	4.3%

(Summary Table 2 continued on the next page)

SUMMARY TABLE 2. Continued

	Fiscal Year											Annual Growth Rate	Latest Annual Change
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987		
5. BIOMEDICAL ENROLLMENTS:													
a. Total biomedical graduate and undergraduate enrollments	556,064	546,542	517,123	507,798	501,907	498,006	502,999	505,437	n/a	n/a	n/a	-1.4%	0.5%
b. Estimated undergraduate 4/	437,525	420,686	388,833	378,161	371,272	367,128	372,687	375,269	n/a	n/a	n/a	-2.2%	0.7%
c. Medical and dental schools	79,279	81,934	84,761	86,502	88,254	89,105	89,121	88,865	87,674	86,170	84,591	0.7%	-1.8%
d. Graduate	39,260	43,922	43,529	43,135	42,381	41,773	41,191	41,303	42,433	43,237	44,495	1.3%	2.9%
e. First-year graduate 5/	9,763	9,612	8,836	8,348	8,279	8,105	8,043	8,320	8,451	8,529	8,609	-1.3%	0.9%

1/ Ratio of academically employed Ph.D.s to a weighted average of total graduate and undergraduate enrollments (WS), where (WS)t = 0.25(US)t + 0.75(GS)t, (US)t = 1/3(Ut + Ut-1 + Ut-2), and (GS)t = 1/3(Gt + Gt-1 + Gt-2).

2/ Latest annual change represents average annual growth rate from 1985-87.

3/ Data for Ph.D.s do NOT exclude those who may also have an M.D. degree. As a result, the sum of percent Ph.D. awardees and percent M.D. awardees (Summary Table 1), can be greater than 100%.

4/ Estimated by the formula Ui = (Ai + 2/Bi +2)Ci, where Ui = biomedical science undergraduate enrollment in year i; Ai+2 = biomedical science baccalaureate degrees awarded in year i+2 (excluding health professions); Bi+2 = total baccalaureate degrees awared in year i+2; Ci = total undergraduate degree-credit enrollment in year i (excluding first professional).

5/ Represents full-time students in doctorate-granting institutions only.

Sources

Item

1a. From Appendix Table B3., Total Ph.D. Degrees Awarded. Data were tabulated from NRC's Doctorate Records File (DRF) by NRC staff.

1b. Data were tabulated from the NRC's DRF by NRC staff.

1c. From Appendix Table B5., Academic Postdoc Appointments. Data were tabulated from the NRC's Survey of Doctorate Recipients (SDR) by NRC staff.

1d. From NSF/NIH Survey of Graduate Science and Engineering Students and Postdoctorates. Differences between these data and postdoc data from the SDR are due in part to differences in the academic fields included.

1e. From Appendix Table B3., Total B.A. Degrees Awarded. Data were provided by the Department of Education's National Center for Education Statistics.

2a. From Appendix Table B6., Total, 1972 Dollars. Data are from the NIH Data Book.

2b. From Appendix Table B8., Total, 1972 Dollars. Data are from the NIH Data Book.

2c. From Appendix Table B7., Total NIH Research Grant Expenditures, 1972 Dollars. Data are from the NIH Data Book.

2d. From Appendix Table B5., Academically Employed Ph.D.s, and Table B1., Students. See footnote above for calculation of weighted average of total graduate and undergraduate enrollments. Faculty data were tabulated from the SDR by NRC staff; student enrollment data are from various sources, see Table B1.

3. From Appendix Table B5., some details on B5 are aggregated. Data were tabulated from the SDR by NRC staff.

4. Data were extracted from the NIH Consolidated Grant Applicant File (CGAF). Research grants were defined as K, M, P, R, and U activity codes; new and competing applications by persons with Ph.D. or Ph.D. - equivalent degrees were selected. Applicants, awardees and awards were totalled by year.

5a. - d. From Appendix Table B1. Data from Department of Education, AAMC, AMA, ADA and NSF. See B1 for detailed source information.

5e. From Appendix Table B2. Data are from the NSF/NIH Survey of Graduate Science and Engineering Students and Postdoctorates.

SUMMARY TABLE 3. Current Trends in Supply/Demand Indicators for Behavioral Science Ph.D.s 1/

	Fiscal Year											Annual Growth Rate	Latest Annual Change
	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987		
1. SUPPLY INDICATORS (New Entrants):													
a. Ph.D. production	4,246	4,207	4,245	4,192	4,472	4,188	4,318	4,184	3,986	4,032	3,980	-0.6%	-1.3%
b. % of Ph.D.s without specific employment prospects at graduation	15.6%	16.7%	15.5%	14.9%	14.6%	16.5%	18.4%	18.5%	16.7%	15.4%	17.1%	0.9%	11.0%
c. Postdoctoral appointments SDR (adjusted)	997	n/a	1,111	n/a	972	n/a	1,039	n/a	1,622	n/a	1,279	2.5%	-10.6%
d. Postdoctoral appointments (GSESP survey)	576	582	n/a	650	637	612	656	615	614	721	671	1.5%	-6.9%
e. B.A. degrees awarded	81,491	75,899	71,109	68,859	65,733	64,386	60,316	58,611	56,930	57,850	60,368	-3.0%	4.4%
2. DEMAND INDICATORS:													
a. Behavioral science R&D expenditures in colleges and universities (1972 $, mil.)	$103.8	$103.0	$105.9	$111.6	$114.4	$102.5	$99.8	$97.9	$101.9	$108.6	$112.6	0.8%	3.7%
b. Ph.D. faculty/student ratio 2/	0.035	n/a	0.038	n/a	0.042	n/a	0.045	n/a	n/a	n/a	n/a	4.3%	3.6%
3. LABOR FORCE: 3/													
Ph.D.s employed in behavioral science fields:													
a. Total	44,283	n/a	49,322	n/a	53,815	n/a	58,811	n/a	64,253	n/a	67,706	4.3%	2.7%
b. Academic (excl. postdoctorates)	25,582	n/a	26,896	n/a	28,235	n/a	29,776	n/a	31,719	n/a	31,809	2.2%	0.1%
c. Business	1,793	n/a	1,901	n/a	2,764	n/a	3,390	n/a	3,125	n/a	2,384	2.9%	-11.9%
d. Government (incl. FFRDC laboratories)	2,931	n/a	3,288	n/a	3,351	n/a	3,559	n/a	3,281	n/a	3,960	3.1%	10.3%
e. Hospitals/clinics	5,595	n/a	6,157	n/a	6,481	n/a	6,584	n/a	7,124	n/a	7,913	3.5%	5.5%
f. Nonprofit	1,487	n/a	2,164	n/a	2,120	n/a	1,865	n/a	2,166	n/a	2,651	6.0%	11.2%
g. Self-employed	3,725	n/a	5,209	n/a	7,352	n/a	9,707	n/a	12,137	n/a	14,550	14.6%	9.9%
h. Other (incl. postdoctorates)	2,416	n/a	2,958	n/a	2,780	n/a	3,017	n/a	3,891	n/a	3,546	3.9%	-4.4%
I. Unemployed and seeking	754	n/a	749	n/a	732	n/a	913	n/a	810	n/a	893	1.7%	5.1%
4. BEHAVIORAL SCIENCE ENROLLMENTS:													
a. Total undergraduate and graduate enrollments	721,816	712,713	676,603	668,593	658,407	654,146	637,570	647,429	n/a	n/a	n/a	-1.5%	1.5%
b. Estimated undergraduate 4/	663,527	648,933	612,802	604,773	593,627	589,815	574,462	583,700	n/a	n/a	n/a	-1.8%	1.6%
c. Total graduate	58,289	63,780	63,801	63,820	64,780	64,331	63,108	63,713	65,640	65,269	65,100	1.1%	-0.3%
d. First-year graduate 5/	11,606	11,695	10,390	9,938	10,227	9,846	9,650	9,408	9,477	9,872	9,555	-1.9%	-3.2%

(See footnotes and item sources on the following page)

SUMMARY TABLE 3. Footnotes and Sources

Footnotes

1/ Behavioral sciences include anthropology, sociology, psychology, and speech pathology/audiology. Numbers in the report may differ from previous reports because of taxonomy changes. Speech pathology/audiology was excluded in the Committee's 1983 report but is included here.

2/ Ratio of academically employed Ph.D.s to a 4-year weighted average of total graduate and undergraduate enrollments (WS), where (WS)t = 1/6(St + 2St-2 + St-3).

3/ Latest annual change represents average annual growth rate from 1985-87.

4/ Estimated by the formula Ui = (Ai+2/Bi+2)Ci where Ui = behavioral science undergraduate enrollment in year i; Ai+2 = behavioral science B.A. degrees awarded in year i+2; Bi+2 = total B.A. degrees awarded in year i+2; Ci = total undergraduate enrollment in year i.

5/ Represents full-time students in doctorate-granting institutions only.

Sources

Item

1a. From Appendix Table C10., Total Ph.D. Degrees Awarded. Data were tabulated from the NRC's Doctorate Records File (DRF) by NRC staff.
1b. Data were tabulated from the DRF by NRC staff.
1c. From Appendix Table C11-1., Total Postdoc Appointments. Data were tabulated from the NRC's Survey of Doctorate Recipients (SDR) by NRC staff.
1d. From NSF/NIH Survey of Graduate Science and Engineering Students and Postdoctorates (GSESP). Differences between these data and postdoc data from the SDR are due in part to differences in the academic fields included.
1e. From Appendix Table C9., Total B.A. Degrees Awarded. Data were provided by the Department of Education's National Center for Education Statistics.

2a. From Appendix Table C18., Total, 1972 Dollars. Data are from NSF Survey of Scientific and Engineering Expenditures at Universities and Colleges.
2b. From Appendix Table C16., which is derived from Tables C1., C4. - C6., C8., and C17. The ratio is academically employed Ph.D.s to a weighted average of students.

3. From Appendix Table C12., some details are aggregated. Data were tabulated from the SDR by NRC staff.

4a. - c. From Appendix Table C1. Data are from the Department of Education and the NSF/NIH GSESP survey.
4d. From Appendix Table C3., First-Year Full-Time Graduate Enrollment in Doctorate-Granting Institutions. Data are from the NSF/NIH GSESP survey.

APPENDIX TABLE A1. Students in U.S. Medical Schools, by Type of Institutional Control, 1961-1987 1/

Fiscal Year	All Schools				Public Schools				Private Schools			
	Total	Medical Students	Interns & Residents	Clinical Fellows	Total	Medical Students	Interns & Residents 2/	Clinical Fellows 2,3,4/	Total	Medical Students	Interns & Residents	Clinical Fellows 2,3/
1961	49,899	30,688	16,970	2,241	25,115	15,954	8,362	799	24,784	14,734	8,608	1,442
1962	52,014	31,077	17,362	3,575	26,412	16,211	8,237	1,964	25,602	14,866	9,125	1,611
1963	52,219	31,238	17,380	3,601	26,198	16,432	8,292	1,474	26,021	14,806	9,088	2,127
1964	54,181	32,001	17,956	4,224	27,292	17,012	8,408	1,872	26,889	14,989	9,548	2,352
1965	55,170	32,106	18,991	4,073	27,561	17,116	8,999	1,446	27,609	14,990	9,992	2,627
1966	56,101	32,482	19,950	3,669	28,610	17,406	9,959	1,245	27,491	15,076	9,991	2,424
1967	57,618	33,142	20,290	4,186	29,358	17,906	9,932	1,520	28,260	15,236	10,358	2,666
1968	61,684	34,318	22,044	5,322	32,308	18,631	11,330	2,347	29,376	15,687	10,714	2,975
1969	63,530	35,102	23,462	4,966	33,153	19,024	11,930	2,199	30,377	16,078	11,532	2,767
1970	67,785	37,978	27,003	2,804	35,309	21,082	12,848	1,379	32,476	16,896	14,155	1,425
1971	71,500	40,476	27,440	3,584	37,733	22,616	13,956	1,161	33,767	17,860	13,484	2,423
1972	81,564	43,576	31,722	6,266	44,169	24,500	16,657	3,012	37,395	19,076	15,065	3,254
1973	86,914	47,523	33,117	6,274	47,429	26,830	16,954	3,645	39,485	20,693	16,163	2,629
1974	91,515	50,242	35,644	5,629	50,230	28,753	18,808	2,669	41,285	21,489	16,836	2,960
1975	95,273	54,076	36,213	4,984	51,677	30,826	19,159	1,692	43,596	23,250	17,054	3,292
1976	100,152	56,244	38,370	5,538	55,561	32,417	20,625	2,519	44,591	23,827	17,745	3,019
1977	103,061	58,266	39,431	5,364	57,364	33,932	21,141	2,291	45,697	24,334	18,290	3,073
1978	106,868	60,424	41,222	5,222	59,880	35,633	21,992	2,255	46,988	24,791	19,230	2,967
1979	112,770	62,582	44,951	5,237	64,024	37,265	24,219	2,540	48,746	25,317	20,732	2,697
1980	116,511	64,020	46,775	5,716	66,335	38,234	25,170	2,931	50,176	25,786	21,605	2,785
1981	118,283	65,412	46,577	6,294	67,091	39,425	24,628	3,038	51,192	25,987	21,949	3,256
1982	123,988	66,484	50,381	7,123	70,601	40,132	26,791	3,678	53,387	26,352	23,590	3,445
1983	126,024	66,886	51,704	7,434	71,323	40,410	27,178	3,735	54,701	26,476	24,526	3,699
1984	127,879	67,437	53,297	7,145	73,251	40,795	28,835	3,621	54,628	26,642	24,462	3,524
1985	130,593	67,086	54,255	9,252	73,603	40,584	29,183	3,836	56,990	26,502	25,072	5,416
1986 5/	127,482	66,607	53,338	7,537	72,991	40,159	28,945	3,887	54,491	26,448	24,393	3,650
1987 6/	127,457	65,918	53,232	8,307	73,319	39,544	29,360	4,415	54,138	26,374	23,872	3,892

1/ Figures were obtained from the Association of American Medical Colleges (1972-88, annual tabulations).
Because AAMC data were incomplete, figures for all items in 1962 and for clinical fellows in 1969 were obtained from the American Medical Association (1960-1988).
2/ Includes only individuals in accredited programs affiliated with medical schools (public schools, all years; private schools, 1972 and 1973).
3/ Data include graduate students in 1972 ,1973 (public schools) and 1974 (private schools).
4/ Interpolated in 1974.
5/ Data for Georgetown clinical fellows and residents are missing.
6/ Data for Tufts clinical fellows and residents are missing; data for East Tennessee medical students are missing.

APPENDIX TABLE A2. Faculty in U.S. Medical Schools, by Type of Institutional Control, 1961-1987

Fiscal Year	Full-Time 1/ All Schools Total	Full-Time 1/ All Schools Basic Sci. Depts.	Full-Time 1/ All Schools Clinical Depts.	Full-Time 1/ Public Schools Total	Full-Time 1/ Public Schools Basic Sci. Depts.	Full-Time 1/ Public Schools Clinical Depts.	Full-Time 1/ Private Schools Total	Full-Time 1/ Private Schools Basic Sci. Depts.	Full-Time 1/ Private Schools Clinical Depts.	Part-Time 2/ Total	Part-Time 2/ Basic Sci. Depts.	Part-Time 2/ Clinical Depts.	Volunteer 2/ Total	Volunteer 2/ Basic Sci. Depts.	Volunteer 2/ Clinical Depts.
1961	11,224	4,023	7,201	5,054	1,849	3,205	6,170	2,174	3,996	n/a	n/a	n/a	n/a	n/a	n/a
1962	12,040	4,342	7,698	5,448	2,011	3,437	6,592	2,331	4,261	n/a	n/a	n/a	n/a	n/a	n/a
1963	13,602	4,693	8,909	6,190	2,202	3,988	7,412	2,491	4,921	n/a	n/a	n/a	n/a	n/a	n/a
1964	15,015	5,541	9,474	7,095	2,705	4,390	7,916	2,832	5,084	n/a	n/a	n/a	n/a	n/a	n/a
1965	15,882	5,233	10,649	7,609	2,452	5,157	8,273	2,781	5,492	n/a	n/a	n/a	n/a	n/a	n/a
1966	17,118	5,671	11,447	8,218	2,666	5,552	8,898	3,003	5,895	n/a	n/a	n/a	n/a	n/a	n/a
1967	19,297	5,877	13,420	9,268	2,907	6,361	10,029	2,970	7,059	n/a	n/a	n/a	n/a	n/a	n/a
1968	22,293	6,639	15,654	11,066	3,364	7,702	11,227	3,275	7,952	n/a	n/a	n/a	n/a	n/a	n/a
1969	23,034	7,048	15,986	11,126	3,567	7,559	11,908	3,481	8,427	n/a	n/a	n/a	n/a	n/a	n/a
1970	24,093	7,287	16,806	11,870	3,778	8,092	12,223	3,509	8,714	n/a	n/a	n/a	n/a	n/a	n/a
1971	27,539	8,283	19,256	13,385	4,300	9,085	14,154	3,983	10,171	7,792	n/a	n/a	49,928	n/a	n/a
1972	30,170	8,714	21,456	14,588	4,642	9,946	15,582	4,072	11,510	7,403	925	6,478	56,732	3,499	53,233
1973	33,265	9,381	23,884	15,455	4,790	10,665	17,810	4,591	13,219	6,870	880	5,990	61,895	2,817	59,078
1974	34,878	9,928	24,950	16,307	5,238	11,069	18,571	4,690	13,881	7,616	793	6,823	62,115	3,946	58,169
1975	37,010	10,164	26,846	17,820	5,488	12,332	19,190	4,676	14,514	10,011	1,027	8,984	64,393	3,896	60,497
1976	39,346	10,743	28,603	19,690	5,944	13,746	19,656	4,799	14,857	7,824	800	7,024	70,453	4,405	66,048
1977	41,650	11,301	30,349	20,819	6,383	14,436	20,831	4,918	15,913	7,738	685	7,053	74,193	4,473	69,720
1978	44,358	11,736	32,622	23,240	6,766	16,474	21,118	4,970	16,148	7,268	749	6,519	78,986	4,649	74,337
1979	46,662	12,605	34,057	24,406	7,164	17,242	22,256	5,441	16,815	9,692	922	8,770	86,096	5,353	80,743
1980	49,496	12,831	36,665	26,444	7,461	18,983	23,052	5,370	17,682	9,052	919	8,133	82,635	4,876	77,759
1981	50,532	12,816	37,716	26,555	7,471	19,084	23,977	5,345	18,632	9,550	1,017	8,533	89,077	5,100	83,977
1982	53,371	13,223	40,148	27,572	7,707	19,865	25,799	5,516	20,283	10,451	1,043	9,408	93,099	5,517	87,582
1983	55,525	13,587	41,938	29,160	7,963	21,197	26,365	5,624	20,741	8,997	975	8,022	105,590	5,779	99,811
1984	57,003	13,560	43,443	29,274	7,782	21,492	27,729	5,778	21,951	9,864	917	8,947	104,240	5,947	98,293
1985	58,774	13,767	45,007	29,603	7,973	21,630	29,171	5,794	23,377	10,141	885	9,256	112,792	6,089	106,703
1986	61,397	14,204	47,193	31,544	8,353	23,191	29,853	5,851	24,002	10,495	977	9,518	113,338	6,226	107,112
1987 3/	63,313	14,479	48,834	32,199	8,396	23,803	31,114	6,083	25,031	8,231	767	7,464	118,768	6,472	112,296

1/ Figures were obtained from the Association of American Medical Colleges (1972-88), special tabulations prepared annually. Because AAMC data were incomplete, total full-time faculty figures for 1962 were obtained from the American Medical Association (1960-88); public and private figures for 1962 were estimated by the committee.

2/ From the American Medical Association (1960-88).

3/ Data for University of California-San Francisco clinical faculty are missing.

APPENDIX TABLE A3. Clinical Sciences Faculty/Student Ratio, by Type of Institutional Control, 1964-87 1/

Fiscal Year	All Schools			Public Schools			Private Schools		
	Clinical Faculty (CF)	4-Yr. Weighted Avg. Enrollment (WS)	Clinical Faculty/ Student Ratio (CF/WS)	Clinical Faculty (CF)	4-Yr. Weighted Avg. Enrollment (WS)	Clinical Faculty/ Student Ratio (CF/WS)	Clinical Faculty (CF)	4-Yr. Weighted Avg. Enrollment (WS)	Clinical Fac./ Student Ratio (CF/WS)
1964	9,474	52,091	0.182	4,390	26,271	0.167	5,084	25,820	0.197
1965	10,649	53,331	0.200	5,157	26,826	0.192	5,492	26,505	0.207
1966	11,447	54,504	0.210	5,552	27,419	0.202	5,895	27,085	0.218
1967	13,420	55,724	0.241	6,361	28,165	0.226	7,059	27,558	0.256
1968	15,654	57,382	0.273	7,702	29,301	0.263	7,952	28,081	0.283
1969	15,986	59,706	0.268	7,559	30,849	0.245	8,427	28,857	0.292
1970	16,806	62,639	0.268	8,092	32,598	0.248	8,714	30,040	0.290
1971	19,256	65,969	0.292	9,085	34,494	0.263	10,171	31,475	0.323
1972	21,456	70,611	0.304	9,946	37,234	0.267	11,510	33,376	0.345
1973	23,884	76,805	0.311	10,665	41,090	0.260	13,219	35,714	0.370
1974	24,950	83,329	0.299	11,069	45,193	0.245	13,881	38,135	0.364
1975	26,846	88,949	0.302	12,332	48,527	0.254	14,514	40,422	0.359
1976	28,603	93,440	0.306	13,746	51,134	0.269	14,857	42,306	0.351
1977	30,349	97,571	0.311	14,436	53,678	0.269	15,913	43,893	0.363
1978	32,622	101,428	0.322	16,474	56,235	0.293	16,148	45,193	0.357
1979	34,057	105,463	0.323	17,242	59,012	0.292	16,815	46,451	0.362
1980	36,665	109,808	0.334	18,983	61,918	0.307	17,682	47,890	0.369
1981	37,716	113,952	0.331	19,084	64,615	0.295	18,632	49,337	0.378
1982	40,148	117,724	0.341	19,865	66,913	0.297	20,283	50,812	0.399
1983	41,938	121,180	0.346	21,197	68,840	0.308	20,741	52,339	0.396
1984	43,443	124,364	0.349	21,492	70,698	0.304	21,951	53,666	0.409
1985	45,007	127,065	0.354	21,630	72,225	0.299	23,377	54,839	0.426
1986	47,193	128,408	0.368	23,191	73,004	0.318	24,002	55,405	0.433
1987	48,834	128,581	0.380	23,803	73,293	0.325	25,031	55,288	0.453

1/ Faculty is defined as all full time faculty employed in clinical science departments of U.S. medical schools. Students are defined as a 4-year weighted average of enrollments, i.e.,(WS)t = 1/6(St + 2St-1 + 2St-2 + St-3), where S = total enrollments of medical students, interns, residents, and clinical fellows. Totals may not sum due to rounding. See Appendix Tables A1 and A2 for supporting data.

APPENDIX TABLE A4. M.D. Graduates of U.S. Medical Schools, by Type of Institutional Control, 1961-1987

Fiscal Year	M.D. Graduates 1/			Number of Medical Schools 2/		
	Total	Public	Private	Total	Public	Private
1961	6,994	n/a	n/a	86	44	42
1962	7,168	n/a	n/a	86	44	42
1963	7,264	n/a	n/a	87	44	43
1964	7,336	n/a	n/a	88	45	43
1965	7,409	n/a	n/a	88	45	43
1966	7,574	n/a	n/a	91	48	43
1967	7,743	n/a	n/a	96	53	43
1968	7,973	n/a	n/a	98	54	44
1969	8,059	n/a	n/a	100	56	44
1970	8,367	n/a	n/a	102	58	44
1971	9,005	4,891	4,114	107	62	45
1972	9,558	5,295	4,263	110	64	46
1973	10,396	5,884	4,512	113	66	47
1974	11,365	6,441	4,924	113	66	47
1975	12,716	7,175	5,541	113	66	47
1976	13,634	7,534	6,100	115	68	47
1977	13,614	7,698	5,916	119	72	47
1978	14,391	8,284	6,107	123	74	49
1979	14,966	8,852	6,114	125	74	51
1980	15,135	8,840	6,295	126	75	51
1981	15,673	9,243	6,430	126	75	51
1982	15,985	9,545	6,440	127	75	52
1983	15,801	9,411	6,390	127	75	52
1984	16,369	9,792	6,577	127	75	52
1985	16,321	9,862	6,459	127	75	52
1986 3/	15,979	9,525	6,293	126	75	51
1987 4/	15,818	9,755	6,224	126	74	52

1/ Figures for 1961-70 were obtained from the American Medical Association (1960-88). Figures for 1971-87 were obtained from the Association of American Medical Colleges (1972-88, annual tabulations). The 1983 figure for private schools includes an estimate from Columbia University.

2/ From the Association of American Medical Colleges (1972-88, annual tabulations).

3/ Data for George Washington University graduates are missing.

4/ Data for East Tennessee University graduates are missing; 1987 figures are April, 1987 estimates.

APPENDIX TABLE A5. Full-Time Budgeted Vacancies on U.S. Medical School Faculties, by Type of Institutional Control, 1961-87 1/

Fiscal Year	All Departments			Basic Science Departments			Clinical Science Departments		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
1961	784	n/a	n/a	305	n/a	n/a	515	n/a	n/a
1962	836	n/a	n/a	348	n/a	n/a	488	n/a	n/a
1963	826	n/a	n/a	350	n/a	n/a	476	n/a	n/a
1964	915	n/a	n/a	401	n/a	n/a	514	n/a	n/a
1965	955	n/a	n/a	376	n/a	n/a	579	n/a	n/a
1966	1,115	n/a	n/a	443	n/a	n/a	672	n/a	n/a
1967	1,374	n/a	n/a	520	n/a	n/a	854	n/a	n/a
1968	1,585	n/a	n/a	570	n/a	n/a	1,015	n/a	n/a
1969	1,691	n/a	n/a	579	n/a	n/a	1,112	n/a	n/a
1970	1,634	n/a	n/a	541	n/a	n/a	1,093	n/a	n/a
1971	1,522	856	666	518	296	222	1,004	560	444
1972	1,757	1,111	646	511	328	183	1,246	783	463
1973	1,857	1,144	713	550	361	189	1,307	783	524
1974	2,079	1,339	740	601	388	213	1,478	951	527
1975	2,250	1,505	745	618	415	203	1,632	1,090	542
1976	2,446	1,588	858	664	467	197	1,782	1,121	661
1977	2,503	1,599	904	638	416	222	1,865	1,183	682
1978	2,697	1,782	915	697	484	213	2,000	1,298	702
1979	2,821	1,811	1,010	721	467	254	2,100	1,344	756
1980	3,055	1,971	1,084	776	489	287	2,279	1,482	797
1981	2,887	1,978	909	656	425	231	2,231	1,553	678
1982	2,932	1,931	1,001	668	432	236	2,264	1,499	765
1983	2,941	1,857	1,084	671	419	252	2,270	1,438	832
1984	3,107	1,890	1,217	705	443	262	2,402	1,447	955
1985	3,373	2,161	1,212	801	531	270	2,572	1,630	942
1986	3,102	1,875	1,227	757	467	290	2,345	1,408	937
1987	3,301	1,974	1,327	785	521	264	2,510	1,447	1,063

1/ Figures for 1961-70 were obtained from the American Medical Association (1960-88). Figures for 1971-87 were obtained from the Association of American Medical Colleges (1972-88, special tabulations prepared annually).

APPENDIX TABLE A6. Primary Activity of Physicians in the U.S., 1963-87 1/

Fiscal Year	Total Active /2		Patient Care		Teaching		Admin.		Research 4/		Other		Unclassified And Unknown Address	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1963	263,063	100.0	246,951	93.9	8,190	3.1	3,332	1.3	3,255	1.2	n/a	-	1,335	0.5
1964	270,885	100.0	253,543	93.6	8,869	3.3	3,512	1.3	3,627	1.3	n/a	-	1,333	0.5
1965	278,809	100.0	259,418	93.0	9,794	3.5	4,057	1.5	4,306	1.5	n/a	-	1,234	0.4
1966	287,163	100.0	266,766	92.9	10,503	3.7	4,143	1.4	4,445	1.5	n/a	-	1,306	0.5
1967	295,732	100.0	274,190	92.7	11,166	3.8	4,121	1.4	4,595	1.6	n/a	-	1,660	0.6
1968 3/	298,401	100.0	261,722	87.7	5,051	1.7	11,715	3.9	15,441	5.2	2,383	0.8	2,089	0.7
1969	305,047	100.0	270,737	88.8	5,149	1.7	12,107	4.0	12,375	4.1	2,598	0.9	5,865	1.9
1970	314,407	100.0	278,535	88.6	5,588	1.8	12,158	3.9	11,929	3.8	2,635	0.8	3,562	1.1
1971	325,435	100.0	287,248	88.3	5,844	1.8	12,076	3.7	10,898	3.3	2,633	0.8	6,736	2.1
1972	336,424	100.0	292,210	86.9	5,836	1.7	11,074	3.3	9,290	2.8	2,693	0.8	15,521	4.6
1973	343,755	100.0	295,257	85.9	6,183	1.8	11,959	3.5	8,332	2.4	2,636	0.8	19,388	5.6
1974	358,134	100.0	301,238	84.1	6,464	1.8	11,739	3.3	8,159	2.3	2,666	0.7	27,868	7.8
1975	372,293	100.0	311,937	83.8	6,445	1.7	11,161	3.0	7,944	2.1	2,793	0.8	32,013	8.6
1976	387,329	100.0	318,412	82.2	6,935	1.8	11,689	3.0	8,514	2.2	2,893	0.7	38,886	10.0
1977	392,913	100.0	332,393	84.6	6,673	1.7	11,954	3.0	9,786	2.5	2,813	0.7	29,296	7.5
1978	410,655	100.0	342,714	83.5	7,025	1.7	11,858	2.9	11,437	2.8	2,777	0.7	34,844	8.5
1979	426,226	100.0	356,783	83.7	7,523	1.8	12,118	2.8	14,515	3.4	2,790	0.7	32,497	7.6
1980	441,935	100.0	376,512	85.2	7,942	1.8	12,209	2.8	15,377	3.5	2,876	0.7	27,019	6.1
1981	450,112	100.0	389,369	86.5	7,202	1.6	13,250	2.9	17,901	4.0	3,023	0.7	19,367	4.3
1982	466,268	100.0	408,663	87.6	7,505	1.6	13,408	2.9	16,743	3.6	3,070	0.7	16,879	3.6
1983	482,635	100.0	423,361	87.7	7,783	1.6	13,828	2.9	18,535	3.8	3,290	0.7	15,838	3.3
1984 5/	500,553	100.0	437,089	87.3	7,802	1.6	13,913	2.8	22,945	4.6	3,352	0.7	15,452	3.1
1985	514,070	100.0	448,820	87.3	7,832	1.5	13,810	2.7	23,268	4.5	3,410	0.7	16,930	3.3
1986	522,325	100.0	462,126	88.5	7,721	1.5	14,399	2.8	17,847	3.4	3,657	0.7	16,575	3.2
1987	537,555	100.0	478,511	89.0	8,114	1.5	14,536	2.7	16,586	3.1	3,581	0.7	16,227	3.0

1/ From the American Medical Association (1963-88).

2/ Excludes temporary foreign; includes unknown address and unclassified.

3/ In 1968 the AMA revised its procedures for classifying physicians, making comparisons with early years extremely difficult. One effect was to drastically reduce the Teaching category and to increase the Administration and Research categories.

4/ In 1968 includes 8,029 fellows formerly included in the Patient Care category.

5/ Although previously unpublished, these data were obtained from the AMA and are reported to be "accurate to within 100" persons.

APPENDIX TABLE A7. R and D Expenditures in U.S. Medical Schools, by Type of Institutional Control, 1962-87 ($ thousands)

Fiscal Year	Total R and D Expenditures: Current Dollars 1/ Total	Current Dollars 1/ Public	Current Dollars 1/ Private	1972 Dollars Total	1972 Dollars Public	1972 Dollars Private	Implicit GNP Price Deflator 2/ (1972 = 100.00)	NIH Clinical Research as a % of Total Research Obligations 3/	Estimated Clinical R and D 4/: 1972 Dollars Total	1972 Dollars Public	1972 Dollars Private
1962	208,573	85,491	123,082	295,848	121,264	174,584	70.50	12.0	35,502	14,552	20,950
1963	264,400	106,000	158,400	369,274	148,045	221,229	71.60	13.5	49,852	19,986	29,866
1964	310,412	128,710	181,702	426,977	177,043	249,934	72.70	15.0	64,046	26,556	37,490
1965	344,787	143,627	201,160	464,047	193,307	270,740	74.30	16.5	76,568	31,896	44,672
1966	377,028	155,960	221,068	490,922	203,073	287,849	76.80	18.0	88,366	36,553	51,813
1967	422,467	178,881	243,586	534,768	226,432	308,337	79.00	20.0	106,954	45,286	61,667
1968	470,958	202,440	268,518	570,167	245,085	325,082	82.60	22.5	128,288	55,144	73,144
1969	489,300	196,800	292,500	564,360	226,990	337,370	86.70	25.0	141,090	56,747	84,343
1970	498,066	205,962	292,104	544,930	225,341	319,589	91.40	28.0	152,580	63,096	89,485
1971	499,841	207,346	292,495	520,668	215,985	304,682	96.00	30.0	156,200	64,796	91,405
1972	558,120	227,638	330,482	558,120	227,638	330,482	100.00	32.0	178,598	72,844	105,754
1973	606,921	264,808	342,113	573,649	250,291	323,358	105.80	34.0	195,041	85,099	109,942
1974	657,287	300,479	356,808	566,627	259,034	307,593	116.00	34.0	192,653	88,071	104,582
1975	784,537	363,893	420,644	616,774	286,079	330,695	127.20	39.0	240,542	111,571	128,971
1976	839,170	385,857	453,313	626,714	288,168	338,546	133.90	37.0	231,884	106,622	125,262
1977	973,827	449,709	524,118	687,246	317,367	369,879	141.70	39.0	268,026	123,773	144,253
1978	1,046,121	490,029	556,092	688,011	322,281	365,730	152.05	41.0	282,085	132,135	149,949
1979	1,190,689	585,488	605,201	719,623	353,855	365,769	165.46	38.0	273,457	134,465	138,992
1980	1,352,409	677,085	675,324	757,992	379,489	378,502	178.42	39.0	295,617	148,001	147,616
1981	1,477,919	766,565	711,354	757,363	392,828	364,535	195.14	38.0	287,798	149,275	138,523
1982	1,605,585	828,954	776,631	776,095	400,693	375,402	206.88	38.0	294,916	152,263	142,653
1983 5/	1,787,532	937,510	850,022	828,981	434,777	394,204	215.63	38.0	315,013	165,215	149,798
1984	1,997,317	1,065,607	931,710	893,934	476,931	417,003	223.43	39.0	348,634	186,003	162,631
1985	2,301,421	1,229,256	1,072,165	997,149	532,607	464,543	230.80	39.0	388,888	207,717	181,172
1986	2,554,561	1,400,225	1,154,336	1,077,692	590,713	486,979	237.04	39.0	420,300	230,378	189,922
1987	2,787,925	1,500,175	1,287,750	1,138,579	612,666	525,913	244.86	39.0	444,046	238,940	205,106

1/ Figures were obtained from the Association of American Medical Colleges (1972-88, annual tabulations). Because AAMC data were incomplete, figures for 1963 and 1969 were obtained from the American Medical Association (1960-88). Items may not sum to totals due to rounding.

2/ From the U.S. Bureau of the Census (1988a,b).

3/ Estimates for 1962-75 were derived from data supplied by John James, Division of Research Grants, NIH. Other years were derived from the NSF Survey of Federal Support to Universities.

4/ See explanatory note on the following page.

5/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983.

(Continued on the next page)

NOTE TO APPENDIX TABLE A7

ESTIMATING CLINICAL RESEARCH EXPENDITURES

An estimate of the amount of support for clinical R and D in U.S. medical schools is needed in order to refine the model of demand for clinical faculty. Data on total R and D expenditures in medical schools, the variable used in the demand models, are available from the AAMC. Data on clinical R and D expenditures, however, are unavailable.

An estimate of clinical R and D expenditures in medical schools has been derived using the proportion of total NIH obligations used to support clinical research. From 1969 to 1987, this proportion has increased by 56%. In the absence of any direct measurements, the percentages shown in the table offer the best available means of estimating clinical R and D expenditures in medical schools.

There is, of course, a serious problem of defining clinical research which clouds any attempt to measure its support. The NIH estimates were derived generally from its Central Scientific Classification System (CSCS) in which each research grant is classified according to its primary field or discipline. If that discipline falls within a group identified as clinical science, then the grant is tabulated as such. All program project and center grants are identified as clinical by the NIH.

The classification of any grant is admittedly subjective; estimates derived by this process are subject to considerable uncertainty. Other classification schemes in use at NIH would be likely to produce different estimates of clinical research from those derived from the CSCS system. But the latter have one advantage - - they were produced for a series of years under a constant definition. Thus, while the absolute levels may not be very precise, the change from year to year seems to have somewhat more validity.

APPENDIX TABLE A8. Professional Service Income in the U.S. Medical Schools, by Type of Institutional Control, 1962-87 ($ thousands)

Fiscal Year	Current Dollars 1/			1972 Dollars 2/		
	Total	Public	Private	Total	Public	Private
1962	15,500	7,453	8,047	21,986	10,572	11,414
1963	16,680	8,624	8,056	23,296	12,045	11,251
1964	18,576	9,124	9,452	25,552	12,550	13,001
1965	21,839	11,534	10,305	29,393	15,524	13,869
1966	25,203	13,369	11,834	32,816	17,408	15,409
1967	30,252	16,407	13,845	38,294	20,768	17,525
1968	47,406	28,096	19,310	57,392	34,015	23,378
1969	65,300	37,600	27,700	75,317	43,368	31,949
1970	90,057	52,232	37,825	98,531	57,147	41,384
1971	115,883	68,379	47,504	120,711	71,228	49,483
1972	138,197	75,466	62,731	138,197	75,466	62,731
1973	158,984	87,763	71,221	150,268	82,952	67,317
1974	201,642	121,842	79,800	173,829	105,036	68,793
1975	305,331	168,798	136,533	240,040	132,703	107,337
1976	409,877	218,905	190,972	306,107	163,484	142,623
1977	553,664	263,965	289,699	390,730	186,284	204,445
1978	616,971	296,219	320,752	405,768	194,817	210,952
1979	729,439	361,104	368,335	440,855	218,242	222,613
1980	880,335	436,567	443,768	493,406	244,685	248,721
1981	1,026,296	500,402	525,894	525,928	256,432	269,496
1982	1,265,146	597,484	667,662	611,536	288,807	322,729
1983 3/	1,595,165	771,330	823,835	739,770	357,710	382,060
1984	1,800,954	868,772	932,182	806,048	388,834	417,214
1985	2,208,590	974,988	1,233,602	956,928	422,438	534,490
1986	2,346,965	1,156,401	1,188,564	990,113	488,694	501,419
1987	2,744,498	1,273,780	1,470,718	1,120,844	520,207	600,636

1/ This is income under control of the institution. An unknown amount is not under control of the institution and is not reported here. Figures were obtained from the Association of American Medical Colleges (1972-88, annual tabulations). Because AAMC data were incomplete, figures for 1969 were obtained from the American Medical Association (1960-88). Items may not sum to totals due to rounding.

2/ 1972 dollars were obtained by using the implicit GNP Price Deflator (U.S. Bureau of the Census - - see Appendix Table A7).

3/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983.

APPENDIX TABLE A9. Average Clinical R and D Expenditures and Professional Service Income per U.S. Medical School, by Type of Institutional Control, 1962-87 1/ (1972 $ thousands)

Fiscal Year	Clinical R and D Expenditures: Average per School			Clinical R and D Expenditures: Number of Schools Reporting 2/			Professional Service Income: Average per School			Professional Service Income: Number of Schools reporting 2/			Sum of Average Clinical R&D plus Professional Service Income per School		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1962	413	331	499	86	44	42	733	587	951	30	18	12	1,146	918	1,450
1963	573	444	711	87	45	42	751	669	865	31	18	13	1,324	1,113	1,577
1964	745	604	893	86	44	42	824	738	929	31	17	14	1,569	1,342	1,821
1965	880	709	1,064	87	45	42	891	817	991	33	19	14	1,771	1,526	2,054
1966	993	778	1,234	89	47	42	994	967	1,027	33	18	15	1,987	1,745	2,261
1967	1,114	854	1,434	96	53	43	891	865	922	43	24	19	2,005	1,720	2,357
1968	1,323	1,003	1,742	97	55	42	1,025	1,031	1,016	56	33	23	2,347	2,033	2,758
1969	1,550	1,091	2,163	91	52	39	1,321	1,314	1,331	57	33	24	2,872	2,405	3,494
1970	1,526	1,088	2,131	100	58	42	1,388	1,361	1,427	71	42	29	2,914	2,448	3,558
1971	1,531	1,080	2,176	102	60	42	1,724	1,656	1,833	70	43	27	3,256	2,736	4,009
1972	1,734	1,235	2,404	103	59	44	1,946	1,841	2,091	71	41	30	3,680	3,075	4,495
1973	1,894	1,418	2,557	103	60	43	2,147	2,127	2,172	70	39	31	4,040	3,545	4,728
1974	1,736	1,334	2,324	111	66	45	2,381	2,283	2,548	73	46	27	4,117	3,618	4,872
1975	2,167	1,665	2,931	111	67	44	3,077	2,765	3,578	78	48	30	5,244	4,430	6,509
1976	2,070	1,591	2,784	112	67	45	3,644	3,270	4,195	84	50	34	5,715	4,861	6,978
1977	2,311	1,768	3,136	116	70	46	4,390	3,450	5,841	89	54	35	6,701	5,218	8,977
1978	2,351	1,835	3,124	120	72	48	4,363	3,479	5,701	93	56	37	6,714	5,314	8,825
1979	2,260	1,842	2,896	121	73	48	4,740	3,829	6,184	93	57	36	7,000	5,671	9,079
1980	2,443	2,000	3,141	121	74	47	5,140	4,078	6,909	96	60	36	7,583	6,078	10,050
1981	2,398	2,045	2,947	120	73	47	5,259	4,136	7,092	100	62	38	7,658	6,181	10,039
1982	2,398	2,058	2,911	123	74	49	5,995	4,658	8,068	102	62	40	8,393	6,716	10,980
1983 3/	2,561	2,233	3,057	123	74	49	6,914	5,420	9,319	107	66	41	9,475	7,652	12,376
1984	2,812	2,514	3,253	124	74	50	7,533	5,891	10,176	107	66	41	10,345	8,405	13,429
1985	3,062	2,770	3,484	127	75	52	8,699	6,401	12,147	110	66	44	11,761	9,170	15,632
1986	3,309	3,072	3,652	127	75	52	8,920	7,187	11,661	111	68	43	12,229	10,258	15,313
1987	3,496	3,229	3,870	127	74	53	9,919	7,650	13,347	113	68	45	13,415	10,879	17,217

1/ See Appendix Tables A7 and A8 for supporting data.

2/ From the Association of American Medical Colleges (1972-88, special tabulations generated annually from 1982-88). Figures for 1969 were estimated by the committee.

3/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983.

APPENDIX TABLE A10. Clinical R and D Expenditures + Professional Service Income in U.S. Medical Schools, by Type of Institutional Control, 1962-87 1/ (1972 $, thousands)

Fiscal Year	Sum of Clinical R and D Expenditures + Professional Service Income						Weighted Sum of Clinical R & D + Professional Service Income in Last 3 Years (1972 dollars) 2/			Sum of Average Clinical R&D + Professional Service Income per School in Last 3 Years 2/		
	Current Dollars			1972 Dollars								
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1962	40,529	17,712	22,817	57,488	25,123	32,364						
1963	52,374	22,934	29,440	73,148	32,031	41,117						
1964	65,138	28,431	36,707	89,598	39,107	50,491	73,345	32,073	41,273	1,341	1,122	1,606
1965	78,729	35,232	43,496	105,961	47,419	58,542	89,576	39,416	50,160	1,558	1,331	1,818
1966	93,068	41,442	51,626	121,182	53,961	67,222	105,675	46,976	58,699	1,774	1,535	2,048
1967	114,745	52,183	62,562	145,247	66,055	79,193	123,393	55,349	68,044	1,938	1,684	2,233
1968	153,372	73,645	79,727	185,680	89,159	96,521	149,339	68,807	80,532	2,086	1,804	2,433
1969	187,625	86,800	100,825	216,407	100,115	116,292	183,254	86,122	97,132	2,393	2,048	2,842
1970	229,515	109,901	119,614	251,111	120,242	130,869	217,401	102,408	114,993	2,751	2,323	3,326
1971	265,835	130,583	135,253	276,912	136,024	140,888	248,885	119,156	129,729	2,989	2,510	3,655
1972	316,795	148,310	168,485	316,795	148,310	168,485	280,432	135,150	145,283	3,276	2,749	4,018
1973	365,337	177,798	187,539	345,309	168,051	177,258	313,953	150,174	163,779	3,664	3,108	4,432
1974	425,120	224,005	201,115	366,482	193,108	173,375	343,474	169,380	174,094	3,969	3,446	4,706
1975	611,300	310,716	300,584	480,582	244,274	236,308	389,714	199,635	190,079	4,380	3,803	5,245
1976	720,370	361,672	358,698	537,991	270,106	267,885	466,409	237,940	228,469	5,080	4,335	6,217
1977	933,457	439,352	494,105	658,755	310,058	348,698	553,830	273,636	280,194	5,844	4,842	7,361
1978	1,045,881	497,131	548,750	687,853	326,952	360,901	635,839	304,293	331,545	6,457	5,153	8,440
1979	1,181,901	583,589	598,311	714,312	352,707	361,605	687,193	329,167	358,026	6,782	5,379	8,927
1980	1,407,775	700,630	707,144	789,023	392,686	396,337	726,375	356,263	370,112	7,074	5,683	9,258
1981	1,587,905	791,697	796,209	813,726	405,707	408,019	776,521	385,947	390,574	7,456	6,002	9,805
1982	1,875,268	912,487	962,782	906,452	441,070	465,382	830,732	411,293	419,439	7,823	6,289	10,277
1983 3/	2,274,427	1,127,584	1,146,843	1,054,782	522,925	531,857	920,353	452,693	467,660	8,480	6,816	11,093
1984	2,579,908	1,284,359	1,295,549	1,154,683	574,837	579,846	1,042,675	515,440	527,235	9,422	7,606	12,290
1985	3,106,144	1,454,398	1,651,746	1,345,816	630,155	715,661	1,177,491	575,689	601,802	10,481	8,408	13,716
1986	3,343,244	1,704,489	1,638,755	1,410,413	719,072	691,341	1,314,182	638,555	675,627	11,524	9,251	15,001
1987	3,831,789	1,858,848	1,972,941	1,564,890	759,147	805,742	1,432,883	706,862	726,021	12,409	10,141	15,869

1/ See Appendix Tables A7, A8, and A9 for supporting data.

2/ Computed by the formula $DI = 1/4(SI + 2SI\text{-}1 + SI\text{-}2)$, where DI = a weighted average; SI = sum of clinical R and D expenditures + professional service income in medical schools in year i.

3/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983.

APPENDIX TABLE A11-1. Sources of Revenue in U.S. Medical Schools, 1959-87 1/ (current $, millions)

	Total Revenue									Number of Schools Reporting		
Fiscal Year	All Schools	Public Schools	Private Schools	Federal Research	Other Federal	State/ Local Govt.	Tuition Revenue	Prof. Service Income	Other Revenue	All Schools	Public Schools	Private Schools
1959	319						24					
1960	371						26	11		87		
1961	433	191	242				28			87	44	43
1962	515	239	276				30			87	44	43
1963	603	279	324				32			87	44	43
1964	696	323	372				35			87	44	43
1965	779	363	416				39			87	44	43
1966	882	409	473				41			88	44	44
1967	1,010	483	527				44			88	44	44
1968	1,175	549	627				48			89	45	44
1969	1,366	635	731				52			92	47	45
1970	1,550	702	848				56			93	48	45
1971	1,713	815	898	438	322	323	63	209	358	92	48	44
1972	1,945	916	1,030				78			95	51	44
1973	2,181	1,070	1,111				92			96	53	43
1974	2,524	1,321	1,204				112			107	62	45
1975	3,046	1,634	1,412				130			108	63	45
1976	3,389	1,819	1,570	823	398	808	156	609	595	111	65	46
1977	3,940	2,078	1,862				194			112	65	47
1978	4,316	2,338	1,978				231			112	66	46
1979	4,906	2,705	2,201				265			112	66	46
1980	5,701	3,178	2,523				308			119	73	46
1981	6,425	3,628	2,797	1,446	396	1,452	346	1,850	935	119	73	46
1982	7,216	3,995	3,221	1,578	415	1,617	413	2,140	1,054	121	74	47
1983 2/	8,179	4,531	3,647	1,655	415	1,784	482	2,626	1,216	124	75	49
1984	9,010	4,955	4,055	1,820	390	1,896	545	2,980	1,378	125	75	50
1985	10,078	5,513	4,565	2,067	403	2,089	582	3,315	1,622	125	75	50
1986	11,096	6,131	4,965	2,292	467	2,252	628	3,773	1,684	127	75	52
1987	12,589	6,561	6,028	2,500	482	2,335	669	4,737	1,866	127	74	53

1/ From the American Medical Association (1960-88). Numbers may not sum to totals due to rounding.

2/ Financial data from the University of Washington and Mayo Medical School were included for the first time in 1983. These two schools account for three percent of all revenue in U. S. medical schools.

APPENDIX TABLE A11-2. Sources of Revenue in U.S. Medical Schools, 1959-87 1/ (1972 $, millions)

Fiscal Year	Total Revenue: All Schools	Public Schools	Private Schools	Federal Research	Other Federal	State/ Local Govt	Tuition Revenue	Prof. Service Income	Other Revenue	Number of Schools Reporting: All Schools	Public Schools	Private Schools	Implicit GNP Price Deflator 2/ (1972=100.00)
1959	473						36						67.50
1960	540						38	16		87			68.70
1961	625	276	349				40			87	44	43	69.30
1962	730	339	391				43			87	44	43	70.50
1963	842	390	453				45			87	44	43	71.60
1964	957	444	512				48			87	44	43	72.70
1965	1,048	489	560				52			87	44	43	74.30
1966	1,148	533	616				53			88	44	44	76.80
1967	1,278	611	667				56			88	44	44	79.00
1968	1,423	665	759				58			89	45	44	82.60
1969	1,576	732	843				60			92	47	45	86.70
1970	1,696	768	928				61			93	48	45	91.40
1971	1,784	849	935	456	335	336	66	218	373	92	48	44	96.00
1972	1,945	916	1,030				78			95	51	44	100.00
1973	2,061	1,011	1,050				87			96	53	43	105.80
1974	2,176	1,139	1,038				97			107	62	45	116.00
1975	2,395	1,285	1,110				102			108	63	45	127.20
1976	2,531	1,358	1,173	615	297	603	117	455	444	111	65	46	133.90
1977	2,781	1,466	1,314				137			112	65	47	141.70
1978	2,839	1,538	1,301				152			112	66	46	152.05
1979	2,965	1,635	1,330				160			112	66	46	165.46
1980	3,195	1,781	1,414				173			119	73	46	178.42
1981	3,293	1,859	1,433	741	203	744	177	948	479	119	73	46	195.14
1982	3,488	1,931	1,557	763	201	782	200	1,034	509	121	74	47	206.88
1983 3/	3,793	2,101	1,691	768	192	827	224	1,218	564	124	75	49	215.63
1984	4,033	2,218	1,815	815	175	849	244	1,334	617	125	75	50	223.43
1985	4,367	2,389	1,978	896	175	905	252	1,436	703	125	75	50	230.80
1986	4,681	2,586	2,095	967	197	950	265	1,592	710	127	75	52	237.04
1987	5,141	2,679	2,462	1,021	197	954	273	1,935	762	127	74	53	244.86

1/ From the American Medical Association (1960-88). Numbers may not sum to totals due to rounding.

2/ From the U.S. Bureau of Census (1988a,b).

3/ Financial data from the University of Washington and Mayo Medical School, which account for 3% of all revenue in U.S. medical schools, were included for the first time in 1983.

APPENDIX TABLE A12. Students in U.S. Dental Schools, by Type of Institutional Control, 1961-88 1/

Fiscal Year	Predoctoral Enrollment			Graduates			Advanced Specialty Enrollment 2/			Number of Schools		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1961	13,580	6,135	7,445	3,253	1,564	1,689	n/a	n/a	n/a	47	n/a	n/a
1962	13,513	6,121	7,392	3,290	n/a	n/a	n/a	n/a	n/a	47	n/a	n/a
1963	13,576	6,237	7,339	3,207	n/a	n/a	n/a	n/a	n/a	48	n/a	n/a
1964	13,691	6,333	7,358	3,233	n/a	n/a	n/a	n/a	n/a	48	n/a	n/a
1965	13,876	6,524	7,352	3,213	n/a	n/a	n/a	n/a	n/a	49	n/a	n/a
1966	14,020	6,601	7,419	3,181	1,602	1,579	n/a	n/a	n/a	49	n/a	n/a
1967	14,421	6,452	7,969	3,198	n/a	n/a	n/a	n/a	n/a	49	n/a	n/a
1968	14,955	7,108	7,847	3,360	n/a	n/a	1,374	653	721	50	25	25
1969	15,408	7,425	7,983	3,457	n/a	n/a	1,728	833	895	52	28	24
1970	16,008	7,430	8,578	3,433	1,759	1,674	1,851	859	992	53	20	24
1971	16,553	8,338	8,215	3,749	1,996	1,753	1,966	990	976	53	29	24
1972	17,305	8,865	8,440	3,775	1,924	1,851	2,171	1,112	1,059	52	29	23
1973	18,376	9,445	8,931	3,961	1,992	1,969	2,045	1,051	994	56	32	24
1974	19,369	10,217	9,152	4,230	2,147	2,083	2,024	1,068	956	58	34	24
1975	20,146	10,817	9,329	4,515	2,331	2,184	2,062	1,107	955	58	34	24
1976	20,767	11,413	9,354	4,969	2,463	2,506	2,022	1,111	911	59	35	24
1977	21,013	11,628	9,385	5,336	2,920	2,416	2,009	1,112	897	59	35	24
1978	21,510	12,004	9,506	5,177	2,796	2,381	2,054	1,146	908	59	35	24
1979	22,179	12,319	9,860	5,324	2,899	2,425	2,101	1,167	934	60	35	25
1980	22,482	12,523	9,959	5,424	2,964	2,460	2,127	1,185	942	60	35	25
1981	22,842	12,709	10,133	5,256	2,874	2,382	2,169	1,207	962	60	35	25
1982	22,621	12,559	10,062	5,550	3,004	2,546	2,188	1,299	889	60	35	25
1983	22,235	12,217	10,018	5,378	2,941	2,437	2,128	1,246	882	60	35	25
1984	21,428	11,577	9,851	5,756	3,207	2,529	2,159	1,239	920	60	35	25
1985	20,588	10,996	9,592	5,337	2,943	2,394	2,171	1,159	1,012	60	35	25
1986	19,563	10,455	9,108	5,353	2,863	2,490	2,311	1,234	1,077	60	35	25
1987	18,673	10,049	8,624	4,957	2,620	2,337	2,350	1,264	1,086	60	35	25
1988	17,885	9,674	8,211	4,717	2,496	2,221	2,436	1,318	1,118	59	35	24

1/ From the American Dental Association (1969-88).

2/ Public and private numbers were estimated from the total by using the same percentages as in predoctoral enrollments.

APPENDIX TABLE A13. Faculty in U.S. Dental Schools, by Type of Institutional Control, 1969-87 1/

	Full-Time									Part-Time (Full-time Equivalent) 2/		
	All Schools			Public Schools			Private Schools			Clinical Departments		
Fiscal Year	Total	Basic Sci. Depts.	Clin. Depts.	Total	Basic Sci. Depts.	Clin. Depts.	Total	Basic Sci. Depts.	Clin. Depts.	All Schools	Public Schools	Private Schools
1969	2,810	1,167	1,643	1,611	650	961	1,199	51[illegible]	682	926.8	335.6	591.2
1970	3,329	1,389	1,940	1,982	821	1,161	1,347	568	779	1,060.2	422.2	638.0
1971	3,197	1,096	2,101	1,927	647	1,280	1,270	449	821	1,011.3	448.6	562.7
1972	3,351	1,088	2,263	2,041	627	1,414	1,310	461	849	1,129.7	507.4	622.3
1973	3,711	1,269	2,442	2,309	768	1,541	1,402	501	901	1,283.0	654.3	628.7
1974	3,927	1,255	2,672	2,473	764	1,709	1,454	491	963	1,355.3	624.4	730.8
1975	4,373	1,402	2,971	2,766	850	1,916	1,607	552	1,055	1,517.5	746.4	771.1
1976	4,885	1,646	3,239	3,149	1,050	2,099	1,736	596	1,140	1,341.8	664.1	677.7
1977	5,145	1,761	3,384	3,358	1,145	2,213	1,787	616	1,171	1,277.9	618.1	659.7
1978	5,108	1,696	3,412	3,314	1,096	2,218	1,794	600	1,194	1,318.9	648.2	670.7
1979	5,338	1,794	3,544	3,417	1,138	2,279	1,921	656	1,265	1,385.6	654.4	731.2
1980	5,521	1,856	3,665	3,472	1,174	2,298	2,049	682	1,367	1,429.1	684.5	744.6
1981	5,647	1,901	3,746	3,527	1,167	2,360	2,120	734	1,386	1,442.5	691.9	750.6
1982	5,706	1,917	3,789	3,561	1,152	2,409	2,145	765	1,380	1,391.2	694.5	696.7
1983	5,635	1,849	3,786	3,583	1,174	2,409	2,052	675	1,377	1,458.4	686.6	771.8
1984	5,478	1,790	3,688	3,441	1,100	2,341	2,037	690	1,347	1,392.7	661.3	731.4
1985	5,617	1,840	3,777	3,553	1,132	2,421	2,064	708	1,356	1,488.7	701.6	787.1
1986	5,423	1,795	3,628	3,485	1,125	2,360	1,937	669	1,268	1,438.5	697.7	740.8
1987	5,345	1,806	3,539	3,460	1,111	2,349	1,885	695	1,190	1,400.3	677.2	723.1

1/ From the American Dental Association (1969-88).

2/ Part-time faculty positions expressed as full-time equivalents are available for clinical departments only.

APPENDIX TABLE A14-1. Research and Development Revenue in U.S. Dental Schools, by Type of Institutional Control, 1968-87 1/ ($ thousands)

Fiscal Year	R&D Revenue 2/ Current Dollars and Number of Schools Reporting						R&D Revenue 2/ 1972 Dollars 3/			Average R&D Revenue per School Current Dollars			Average R&D Revenue per School 1972 Dollars 3/		
	Total	No.	Public	No.	Private	No.	Total	Public	Private	Total	Public	Private	Total	Public	Private
1968	14,019	46	8,667	23	5,352	23	16,972	10,493	6,479	305	377	233	369	456	282
1969	14,019	47	9,193	24	4,826	23	16,170	10,603	5,566	298	383	210	344	442	242
1970	14,869	47	8,443	24	6,426	23	16,268	9,237	7,031	316	352	279	346	385	306
1971	15,634	47	10,035	25	5,599	22	16,285	10,453	5,832	333	401	255	346	418	265
1972	17,155	48	12,153	27	5,002	21	17,155	12,153	5,002	357	450	238	357	450	238
1973	18,969	49	13,250	27	5,720	22	17,929	12,524	5,406	387	491	260	366	464	246
1974	20,718	50	14,787	28	5,931	22	17,860	12,747	5,113	414	528	270	357	455	232
1975	21,197	49	14,930	28	6,266	21	16,664	11,737	4,926	433	533	298	340	419	235
1976	23,975	50	16,135	28	7,840	22	17,905	12,050	5,855	480	576	356	358	430	266
1977	26,586	54	18,250	32	8,337	22	18,762	12,879	5,884	492	570	379	347	402	267
1978	28,500	56	19,565	33	8,935	23	18,744	12,867	5,876	509	593	388	335	390	255
1979	30,935	56	21,112	33	9,824	23	18,696	12,760	5,937	552	640	427	334	387	258
1980	33,960	57	23,645	34	10,315	23	19,034	13,252	5,781	596	695	448	334	390	251
1981	42,318	55	29,010	33	13,308	22	21,686	14,866	6,820	769	879	605	394	450	310
1982	46,706	57	31,804	34	14,902	23	22,576	15,373	7,203	819	935	648	396	452	313
1983	47,843	57	31,934	34	15,908	23	22,188	14,810	7,377	839	939	692	389	436	321
1984	54,110	57	36,861	34	17,249	23	24,218	16,498	7,720	949	1,084	750	425	485	336
1985	63,277	57	42,601	34	20,676	23	27,416	18,458	8,958	1,110	1,253	899	481	543	389
1986	68,970	57	47,551	35	21,419	22	29,096	20,060	9,036	1,210	1,359	974	510	573	411
1987	74,922	58	52,995	35	21,926	23	30,598	21,643	8,955	1,292	1,514	953	528	618	389

1/ From the American Dental Association (1969-88).

2/ Excludes indirect cost allowances.

3/ 1972 dollars were obtained by using the implicit GNP Price Deflator (U.S. Bureau of the Census – See Appendix Table A7).

APPENDIX TABLE A14-2. Research and Development Expenditures in U.S. Dental Schools, by Type of Institutional Control, 1968-1987 ($ thousands)

	Clinical R&D Expenditures								
	Current Dollars and Number of Schools Reporting						1972 Dollars 2/		
Fiscal Year	Total	No.	Public	No.	Private	No.	Total	Public	Private
1968	n/a		n/a		n/a		n/a	n/a	n/a
1969	n/a		n/a		n/a		n/a	n/a	n/a
1970	n/a		n/a		n/a		n/a	n/a	n/a
1971	n/a		n/a		n/a		n/a	n/a	n/a
1972	n/a		n/a		n/a		n/a	n/a	n/a
1973	n/a		n/a		n/a		n/a	n/a	n/a
1974	10,133	39	7,460	23	2,673	16	8,735	6,431	2,304
1975	10,512	43	8,157	27	2,354	15	8,264	6,413	1,851
1976	12,256	42	8,223	27	4,043	15	9,161	6,141	3,019
1977	11,369	45	8,451	28	2,918	17	8,023	5,964	2,059
1978	13,389	47	9,939	28	3,450	19	8,806	6,537	2,269
1979	12,602	42	9,893	27	2,710	15	7,616	5,979	1,638
1980	15,100	42	12,838	28	2,262	14	8,463	7,195	1,268
1981	19,025	41	15,176	27	3,849	14	9,749	7,777	1,972
1982	24,121	42	18,847	27	5,274	15	11,659	9,110	2,549
1983	22,328	43	17,442	27	4,886	16	10,355	8,089	2,266
1984	22,802	45	17,726	27	5,077	18	10,205	7,934	2,272
1985	25,467	45	19,765	28	5,702	17	11,034	8,564	2,471
1986	30,870	46	23,544	30	7,326	16	13,023	9,933	3,091
1987	33,723	48	26,161	30	7,562	18	13,772	10,684	3,088

1/ From the American Dental Association (1969-88).

2/ 1972 dollars were obtained by using the implicit GNP Price Deflator (U.S. Bureau of the Census -- See Appendix Table A7.)

APPENDIX TABLE A15. Dental Clinic Revenue in U.S. Dental Schools, by Type of Institutional Control, 1968-87 1/ ($, thousands)

	Dental Clinic Revenue									Average Dental Clinical Revenue per School 2/					
	Current Dollars and Number of Schools Reporting						1972 Dollars 3/			Current Dollars			1972 Dollars 3/		
Fiscal Year	Total	No.	Public	No.	Private	No.	Total	Public	Private	Total	Public	Private	Total	Public	Private
1968	12,563	48	5,182	23	7,381	23	15,209	6,274	8,936	273	225	321	331	273	389
1969	14,004	47	5,871	24	8,133	23	16,152	6,772	9,381	298	245	354	344	282	408
1970	16,023	47	6,272	24	9,751	23	17,531	6,862	10,668	341	261	424	373	286	464
1971	18,490	47	7,521	25	10,969	22	19,260	7,834	11,426	393	301	499	410	313	519
1972	20,567	49	8,858	27	11,709	22	20,567	8,858	11,709	420	328	532	420	328	532
1973	21,787	48	9,481	25	12,306	23	20,593	8,961	11,631	454	379	535	429	358	506
1974	27,510	51	12,809	28	14,701	23	23,716	11,042	12,673	539	457	639	465	394	551
1975	32,193	50	14,724	27	17,469	23	25,309	11,575	13,733	644	545	760	506	429	597
1976	38,655	52	17,939	28	20,716	24	28,869	13,397	15,471	743	641	863	555	478	645
1977	43,989	55	21,010	31	22,979	24	31,044	14,827	16,217	800	678	957	564	478	676
1978	47,588	57	21,946	33	25,642	24	31,298	14,433	16,864	835	665	1,068	549	437	703
1979	57,979	59	29,065	35	28,914	24	35,041	17,566	17,475	983	830	1,205	594	502	728
1980	63,499	59	31,912	35	31,587	24	35,590	17,886	17,704	1,076	912	1,316	603	511	738
1981	74,141	58	38,321	34	35,820	24	37,994	19,638	18,356	1,278	1,127	1,493	655	578	765
1982	82,311	59	42,099	34	40,212	25	39,787	20,349	19,437	1,395	1,238	1,608	674	599	777
1983	94,272	60	49,524	35	44,748	25	43,719	22,967	20,752	1,571	1,415	1,790	729	656	830
1984	99,501	60	52,680	35	46,821	25	44,533	23,578	20,956	1,658	1,505	1,873	742	674	838
1985	104,941	59	56,219	35	48,722	24	45,468	24,358	21,110	1,779	1,606	2,030	771	696	880
1986	110,686	59	59,038	35	51,648	24	46,695	24,906	21,789	1,876	1,687	2,152	791	712	908
1987	118,641	59	64,491	35	54,150	24	48,453	26,338	22,115	2,011	1,843	2,256	821	753	921

1/ From the American Dental Association (1969-88).

2/ The average revenue per school is based on the number of schools reporting nonzero revenue. Where the number of schools reporting is less than the total number of schools, it cannot be determined with certainty whether "nonreporting" schools reported zero revenue or failed to report these data. See Appendix Table A18 for the number of schools reporting revenue from any source.

3/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census--See Appendix Table A7).

APPENDIX TABLE A16. Dental School Tuition Revenue, by Type of Institutional Control, 1968-87 1/ ($ thousands)

Fiscal Year	Dental School Tuition Revenue: Current Dollars and Number of Schools Reporting: Total	No.	Public	No.	Private	No.	Dental School Tuition Revenue: 1972 Dollars 3/: Total	Public	Private	Average Tuition Revenue per School: Current Dollars: Total	Public	Private	Average Tuition Revenue per School: 1972 Dollars 3/: Total	Public	Private
1968	20,282	46	6,239	23	14,043	23	24,554	7,553	17,001	441	271	611	534	328	739
1969	22,994	47	6,622	24	16,372	23	26,521	7,638	18,884	489	276	712	564	318	821
1970	26,367	47	6,882	24	19,210	23	28,848	7,530	21,018	561	287	835	614	314	914
1971	28,793	47	7,836	24	20,957	23	29,993	8,163	21,830	613	327	911	638	340	949
1972	36,278	48	10,511	26	25,767	22	36,278	10,511	25,767	756	404	1,171	756	404	1,171
1973	41,129	49	12,003	26	29,125	23	38,874	11,345	27,528	839	462	1,266	793	436	1,197
1974	46,197	51	13,911	28	32,286	23	39,825	11,992	27,833	906	497	1,404	781	428	1,210
1975	51,648	51	15,209	28	36,440	23	40,604	11,957	28,648	1,013	543	1,584	796	427	1,246
1976	58,266	53	16,623	29	41,643	24	43,515	12,414	31,100	1,099	573	1,735	821	428	1,296
1977	67,818	56	19,872	32	47,946	24	47,860	14,024	33,836	1,211	621	1,998	855	438	1,410
1978	78,930	57	23,266	33	55,664	24	51,911	15,302	36,609	1,385	705	2,319	911	464	1,525
1979	94,394	59	26,860	35	67,534	24	57,049	16,234	40,816	1,600	767	2,814	967	464	1,701
1980	108,341	59	29,069	35	79,273	24	60,722	16,292	44,431	1,836	831	3,303	1,029	465	1,851
1981	115,668	59	32,716	35	82,897	24	59,274	16,765	42,481	1,960	935	3,454	1,005	479	1,770
1982	147,308	60	39,690	35	107,618	25	71,205	19,185	52,020	2,455	1,134	4,305	1,187	548	2,081
1983	164,990	60	46,018	35	118,972	25	76,515	21,341	55,174	2,750	1,315	4,759	1,275	610	2,207
1984	172,088	60	48,161	35	123,927	25	77,021	21,555	55,466	2,868	1,376	4,957	1,284	616	2,219
1985	179,621	59	50,278	35	129,343	24	77,825	21,784	56,041	3,044	1,437	5,389	1,319	622	2,335
1986	186,452	59	53,690	35	132,761	24	78,658	22,650	56,008	3,160	1,534	5,532	1,333	647	2,334
1987	191,934	59	55,751	35	136,183	24	78,385	22,769	55,617	3,253	1,593	5,674	1,329	651	2,317

1/ From the American Dental Association (1969-88).

2/ The average revenue per school is based on the number of schools reporting nonzero revenue. Where the number of schools reporting is less than the total number of schools, it cannot be determined with certainty whether "nonreporting" schools reported zero revenue or failed to report these data. See Appendix Table A18 for the number of schools reporting revenue from any source.

3/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census--See Appendix Table A7).

APPENDIX TABLE A17. Revenue from State and Local Governments in U.S. Dental Schools, by Type of Institutional Control, 1968-87 1/ ($ thousands)

	Revenue from State/Local Governments 2/									Average State/Local Govt. Revenue per School 3/					
	Current Dollars and Number of Schools Reporting						1972 Dollars 4/			Current Dollars			1972 Dollars 4/		
Fiscal Year	Total	No.	Public	No.	Private	No.	Total	Public	Private	Total	Public	Private	Total	Public	Private
1968	27,130	23	27,130	23	-		32,845	32,845	0	590	1,180	0	714	1,428	0
1969	32,980	24	32,980	24	-		38,039	38,039	0	702	1,374	0	809	1,585	0
1970	40,488	24	40,488	24	-		44,298	44,298	0	861	1,687	0	942	1,846	0
1971	34,545	24	33,418	20	1,127	4	35,984	34,810	1,174	720	1,337	49	750	1,392	51
1972	68,207	40	62,084	27	6,123	13	68,207	62,084	6,123	1,392	2,299	278	1,392	2,299	278
1973	85,874	40	78,321	27	7,553	13	81,166	74,027	7,139	1,718	2,901	328	1,623	2,742	310
1974	99,708	43	87,857	28	11,851	15	85,955	75,739	10,216	1,955	3,138	515	1,685	2,705	444
1975	117,562	43	102,656	28	14,906	15	92,423	80,720	11,719	2,306	3,667	648	1,812	2,883	510
1976	142,735	46	122,968	29	19,767	17	106,598	91,836	14,763	2,693	4,240	824	2,011	3,167	615
1977	175,927	51	151,564	32	24,363	19	124,155	106,961	17,193	3,142	4,736	1,015	2,217	3,343	716
1978	206,974	52	177,737	33	28,237	19	135,465	116,894	18,571	3,614	5,386	1,177	2,377	3,542	774
1979	225,762	54	195,132	35	30,630	19	136,445	117,933	18,512	3,827	5,575	1,276	2,313	3,370	771
1980	253,432	53	217,464	35	35,968	18	142,042	122,612	20,159	4,296	6,213	1,499	2,422	3,503	845
1981	280,176	59	243,719	35	36,457	24	143,577	125,901	18,682	4,749	6,963	1,519	2,453	3,597	785
1982	306,571	54	268,196	35	38,375	19	148,188	129,469	18,549	5,110	7,663	1,535	2,467	3,699	741
1983	318,326	54	278,307	35	40,019	19	147,626	129,067	18,559	5,305	7,952	1,601	2,460	3,688	742
1984	332,256	52	288,446	35	43,810	17	148,707	129,224	19,608	6,390	8,241	2,577	2,863	3,692	1,155
1985	351,068	51	306,793	35	44,275	16	152,109	132,841	19,183	6,884	8,766	2,767	2,981	3,795	1,198
1986	368,671	52	328,408	35	40,263	17	155,531	138,588	16,986	7,090	9,383	2,368	2,992	3,960	999
1987	382,359	51	342,277	35	40,082	16	156,154	139,649	16,369	7,497	9,779	2,506	3,059	3,990	1,022

1/ From the American Dental Association (1969-88).

2/ Excludes sponsored research and education programs, and indirect cost allowances.

3/ The average revenue per school is based on the number of schools reporting nonzero revenue. Where the number of schools reporting is less than the total number of schools, it cannot be determined with certainty whether "nonreporting" schools reported zero revenue or failed to report these data. See Appendix Table A18 for the number of schools reporting revenue from any source.

3/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census--See Appendix Table A7).

APPENDIX TABLE A18. Total Revenue in U.S. Dental Schools, by Type of Institutional Control, 1968-87 1/ ($ thousands)

Fiscal Year	Total Dental School Revenue: Current Dollars and Number of Schools Reporting: Total	No.	Public	No.	Private	No.	Total Dental School Revenue: 1972 Dollars 2/: Total	Public	Private	Total Revenue per School: Current Dollars: Total	Public	Private	Total Revenue per School: 1972 Dollars 2/: Total	Public	Private
1968	108,649	46	65,164	23	43,485	23	131,536	78,891	52,645	2,362	2,833	1,891	2,859	3,430	2,289
1969	127,076	47	76,126	24	50,950	23	146,570	87,804	58,766	2,704	3,172	2,215	3,119	3,658	2,555
1970 3/	141,960	47	85,290	24	56,670	23	155,317	93,315	62,002	3,020	3,554	2,464	3,305	3,888	2,696
1971	167,141	48	94,453	25	72,688	23	174,105	98,389	75,717	3,482	3,778	3,160	3,627	3,936	3,292
1972	195,625	49	116,467	27	79,157	22	195,625	116,467	79,157	3,992	4,314	3,598	3,992	4,314	3,598
1973	238,210	50	147,124	27	91,086	23	225,151	139,059	86,093	4,764	5,449	3,960	4,503	5,150	3,743
1974	270,705	51	170,496	28	100,209	23	233,366	146,979	86,387	5,308	6,089	4,357	4,576	5,249	3,756
1975	310,388	51	191,518	28	118,869	23	244,016	150,564	93,450	6,086	6,840	5,168	4,785	5,377	4,063
1976	347,804	53	216,421	29	131,383	24	259,749	161,629	98,120	6,562	7,463	5,474	4,901	5,573	4,088
1977	394,938	56	251,414	32	143,524	24	278,714	177,427	101,287	7,052	7,857	5,980	4,977	5,545	4,220
1978	441,075	57	281,661	33	159,414	24	290,085	185,242	104,843	7,738	8,535	6,642	5,089	5,613	4,368
1979	489,932	59	311,643	35	178,289	24	296,103	188,349	107,754	8,304	8,904	7,429	5,019	5,381	4,490
1980	541,413	59	341,357	35	200,057	24	303,449	191,322	112,127	9,176	9,753	8,336	5,143	5,466	4,672
1981	607,113	59	380,828	35	226,284	24	311,117	195,156	115,960	10,290	10,881	9,429	5,273	5,576	4,832
1982	665,168	60	415,991	35	249,177	25	321,524	201,078	120,445	11,086	11,885	9,967	5,359	5,745	4,818
1983	699,811	60	434,584	35	265,227	25	324,543	201,542	123,001	11,664	12,417	10,609	5,409	5,758	4,920
1984	735,193	60	458,527	35	276,666	25	329,048	205,222	123,827	12,253	13,101	11,067	5,484	5,863	4,953
1985	778,376	59	489,515	35	288,861	24	337,251	212,095	125,156	13,193	13,986	12,036	5,716	6,060	5,215
1986	816,300	59	525,897	35	290,403	24	344,372	221,860	122,512	13,836	15,026	12,100	5,837	6,339	5,105
1987	860,537	59	555,875	35	304,662	24	351,440	227,017	124,423	14,585	15,882	12,694	5,957	6,486	5,184

1/ From the American Dental Association (1969-88).

2/ 1972 dollars were obtained by using the implicit GNP Price Deflator (U.S. Bureau of the Census -- See Appendix Table A7).

3/ Public figures for 1970 are interpolated.

APPENDIX TABLE A19. Full-Time Budgeted Vacancies on U.S. Dental School Faculties, by Type of Institutional Control, 1969-87 1/

Fiscal Year	All Departments			Basic Science Depts.			Clinical Science Depts.		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
1969	293	223	70	110	79	31	183	144	39
1970	201	101	100	60	23	37	141	78	63
1971	167	102	65	51	26	25	116	76	40
1972	160	102	58	42	22	20	118	80	38
1973	268	189	79	79	51	28	189	138	51
1974	278	176	102	76	50	26	202	126	76
1975	224	147	77	45	33	12	179	114	65
1976	203	132	71	43	24	19	160	108	52
1977	179	116	63	37	24	13	142	92	50
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	193	105	88	49	19	30	144	86	58
1980	191	113	78	39	19	20	152	94	58
1981	161	94	67	34	20	14	127	74	53
1982	174	87	87	37	25	12	137	62	75
1983	192	120	72	49	36	13	143	84	59
1984	238	158	80	50	33	17	188	125	63
1985	211	150	61	62	50	12	149	100	49
1986	248	207	41	73	61	12	175	146	29
1987	246	178	68	64	50	14	182	128	54

1/ From the American Dental Association (1968-88).

APPENDIX TABLE A20. NIH Trainees and Fellows in Clinical Dental Research, 1977-86 1/

Fiscal Year	Total			Trainees			Fellows		
	Total	Predoc	Postdoc	Total	Predoc	Postdoc	Total	Predoc	Postdoc
1977	112	12	100	61	9	52	51	3	48
1978	172	20	152	123	20	103	49	0	49
1979	176	28	148	128	28	100	48	0	48
1980	171	23	148	116	23	93	55	0	55
1981	170	18	152	107	18	89	63	0	63
1982	160	20	140	112	20	92	48	0	48
1983	160	21	139	121	21	100	39	0	39
1984	167	21	146	133	21	112	34	0	34
1985	171	19	152	131	19	112	40	0	40
1986	137	19	118	117	19	98	20	0	20

1/Figures were obtained from the NIH Trainee and Fellow File, and represent persons receiving NRSA awards.

APPENDIX TABLE A21. Number of New Faculty and Percentage of New Faculty Among Full-Time Faculty in U.S. Medical Schools, by Year and Degree Type, 1970-88 1/

Year	New Faculty			Percent New Faculty		
	Total	MD	PhD	Total	MD	PhD
1970	3017	1732	889	10.14	9.33	11.75
1971	3628	2163	998	11.29	10.96	11.99
1972	3731	2171	1085	10.80	10.18	11.89
1973	4232	2680	1086	11.62	11.96	11.10
1974	4159	2514	1111	10.69	10.42	10.55
1975	4369	2791	1110	10.55	10.88	9.84
1976	4338	2878	1041	9.91	10.54	8.74
1977	4620	3072	1128	10.11	10.68	9.09
1978	4435	2882	1139	9.30	9.55	8.78
1979	4651	3061	1213	9.34	9.68	8.90
1980	4428	2978	1100	8.49	8.96	7.69
1981	3990	2730	972	7.36	7.87	6.56
1982	3892	2620	1014	7.04	7.36	6.69
1983	3715	2652	863	6.61	7.29	5.59
1984	3805	2581	1006	6.66	6.93	6.45
1985	3579	2428	903	6.15	6.36	5.71
1986	3694	2571	882	6.23	6.57	5.48
1987	3377	2344	785	5.58	5.85	4.78
1988	2891	2006	669	4.72	4.93	4.04

1/ Data derived from the AAMC Faculty Roster and published by NIH/OSPL/DPE/PPRB, 1989

APPENDIX TABLE A22. Number and Percentage of New Faculty in U.S. Medical Schools Who Have Had Postdoctoral Research Training, by Department and Degree Type, 1982-1988 1/

All Departments

Year	MD Total	MD Post-docs	Percent	PhD Total	PhD Post-docs	Percent
1982	2,620	1,174	44.8	1,014	744	73.4
1983	2,652	1,171	44.2	863	633	73.3
1984	2,581	1,145	44.4	1,006	735	73.1
1985	2,428	1,037	42.7	903	652	72.2
1986	2,571	1,047	40.7	882	655	74.3
1987	2,344	934	39.8	785	554	70.6
1988	2,006	740	36.9	669	459	68.6
Average			41.9			72.2

Basic Science Departments

Year	MD Total	MD Post-docs	Percent	PhD Total	PhD Post-docs	Percent
1982	124	70	56.5	446	392	87.9
1983	106	51	48.1	378	339	89.7
1984	119	59	49.6	430	375	87.2
1985	113	57	50.4	392	346	88.3
1986	105	53	50.5	400	357	89.3
1987	109	55	50.5	330	287	87.0
1988	90	54	60.0	270	234	86.7
Average			52.2			88.0

Clinical Science Departments

Year	MD Total	MD Post-docs	Percent	PhD Total	PhD Post-docs	Percent
1982	2,486	1,100	44.2	514	331	64.4
1983	2,539	1,121	44.2	455	282	62.0
1984	2,455	1,084	44.2	543	346	63.7
1985	2,301	973	42.3	469	294	62.7
1986	2,454	990	40.3	457	283	61.9
1987	2,220	874	39.4	419	249	59.4
1988	1,906	683	35.8	370	214	57.8
Average			41.5			61.7

1/ Data derived from the AAMC Faculty Roster and published by NIH/OSPL/ DPE/PPRB, 1989

APPENDIX TABLE A23. Composition of Total Faculty and New Faculty in Basic Science Departments of U.S. Medical Schools, by Degree, 1970-88 1/

	All Faculty					New Faculty Only				
		MD		PhD			MD		PhD	
Year	Total	Number	Percent	Number	Percent	Total	Number	Percent	Number	Percent
1970	7,757	2,857	34.3	4,592	59.2	637	188	29.5	409	64.2
1971	8,293	2,740	33.0	5,009	60.4	684	173	25.3	466	68.1
1972	8,810	2,835	32.2	5,408	61.4	742	191	25.7	504	67.9
1973	9,199	2,885	31.1	5,732	62.3	838	199	23.7	578	69.0
1974	9,661	2,927	30.3	6,134	63.5	822	210	25.5	574	69.8
1975	10,088	2,965	29.4	6,506	64.5	777	169	21.8	561	72.2
1976	10,391	2,993	28.8	6,783	65.3	760	189	24.9	530	69.7
1977	10,634	2,997	28.2	7,030	66.1	747	186	24.9	520	69.6
1978	10,923	3,006	27.5	7,310	66.9	791	192	24.3	550	69.5
1979	11,229	3,002	26.7	7,598	67.7	734	172	23.4	522	71.1
1980	11,524	3,017	26.2	7,890	68.5	732	147	20.1	545	74.5
1981	11,715	3,012	25.7	8,075	68.9	708	150	21.2	518	73.2
1982	11,801	2,978	25.2	8,208	69.6	607	147	24.2	432	71.2
1983	11,804	2,943	24.9	8,310	70.4	591	124	21.0	446	75.5
1984	11,768	2,901	24.6	8,342	70.8	507	106	20.9	378	74.6
1985	11,874	2,889	24.3	8,457	71.2	565	119	21.1	430	76.1
1986	11,925	2,885	24.2	8,526	71.5	528	113	21.4	392	74.2
1987	12,048	2,884	23.9	8,670	72.0	522	105	20.1	400	76.6
1988	12,009	2,866	23.9	8,663	72.1	462	109	23.6	330	71.4

1/ Data derived from the AAMC Faculty Roster and published by NIH/OSPL/DPE/PPRB, 1989

APPENDIX TABLE A24. Composition of Total Faculty and New Faculty in Clinical Departments of U.S. Medical Schools, by Degree, 1970-88 1/

	All Faculty					New Faculty Only				
		MD		PhD			MD		PhD	
Year	Total	Number	Percent	Number	Percent	Total	Number	Percent	Number	Percent
1970	20,405	15,542	76.2	2,562	12.6	1,844	1,345	72.9	302	16.4
1971	22,064	16,804	76.2	2,829	12.8	2,128	1,550	72.9	347	16.3
1972	23,808	18,113	76.1	3,151	13.2	2,684	1,979	74.3	410	15.4
1973	25,217	19,158	76.0	3,421	13.6	2,659	1,963	73.8	425	16.0
1974	27,135	20,806	76.7	3,715	13.7	3,159	2,459	77.8	440	13.9
1975	29,052	22,306	76.8	4,017	13.8	3,098	2,329	75.2	470	15.2
1976	31,032	23,919	77.1	4,317	13.9	3,347	2,579	77.1	494	14.8
1977	32,660	25,352	77.6	4,536	13.9	3,366	2,673	79.4	447	13.3
1978	34,409	26,758	77.8	4,827	14.0	3,626	2,871	79.2	508	14.0
1979	36,256	28,211	77.8	5,159	14.2	3,502	2,701	77.1	545	15.6
1980	38,281	29,808	77.9	5,520	14.4	3,730	2,902	77.8	597	16.0
1981	40,126	31,278	77.9	5,831	14.5	3,562	2,815	79.0	529	14.9
1982	41,203	32,190	78.1	6,028	14.6	3,231	2,572	79.6	481	14.9
1983	42,179	32,995	78.2	6,213	14.7	3,186	2,486	78.0	514	16.1
1984	43,205	33,974	78.6	6,374	14.8	3,125	2,539	81.2	455	14.6
1985	44,344	34,927	78.8	6,581	14.8	3,152	2,455	77.9	543	17.2
1986	45,397	35,843	79.0	6,790	15.0	2,939	2,301	78.3	469	16.0
1987	46,544	36,801	79.1	6,987	15.0	3,081	2,454	79.6	457	14.8
1988	47,380	37,467	79.1	7,123	15.0	2,823	2,220	78.6	419	14.8

1/ Data derived from the AAMC Faculty Roster and published by NIH/OSPL/DPE/PPRB, 1989

APPENDIX TABLE A25. Number of Faculty Who Had Returned to Full-Time Positions at U.S. Medical Schools After Leaving Academic Medicine in 1970 For One or More Years 1/

Returned By	Total 2/ (N=1850)	MD (N=1212)	PhD (N=350)
1972	5.5	6	7.1
1973	9	9.7	10.9
1974	10.6	11.5	13.7
1975	11.4	12.7	13.1
1976	12	13.2	15.1
1977	12.8	14.2	16
1978	12.8	14.1	16.6
1979	12.9	14.7	16
1980	12.4	14.1	15.7
1981	12.3	14	15.4
1982	11.9	13.6	14.9
1983	11.8	13.7	14.3
1984	11.5	13.3	14
1985	11.5	13.1	14.3
1986	11.5	13.4	13.4
1987	11.3	13.2	13.1
1988	10.9	13	11.7

1/ Data derived from the AAMC Faculty Roster and published by NIH/OSPL/DPE/PPRB, 1989

2/ Total includes faculty drop-outs who held degrees other than MD or PhD

APPENDIX TABLE B1. Biomedical Science Enrollments in Colleges and Universities, by Type of Institutional Control, 1960-87 1/

Fiscal Year	Total Undergraduate and Graduate Enrollment			Estimated Undergraduate Enrollment 2/			Graduate Enrollment: Total Medical, Dental and Biomed. Sci. Graduate			Medical and Dental 3/			Biomedical Science Graduate 4/		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1960	197,419	n/a	n/a	143,037	n/a	n/a	54,382	n/a	n/a	43,665	n/a	n/a	10,717	6,516	4,201
1961	217,711	n/a	n/a	161,236	n/a	n/a	56,475	n/a	n/a	44,268	n/a	n/a	12,207	7,768	4,439
1962	241,945	n/a	n/a	183,890	n/a	n/a	58,055	n/a	n/a	44,590	n/a	n/a	13,465	8,841	4,624
1963	265,534	n/a	n/a	205,839	n/a	n/a	59,695	n/a	n/a	44,814	n/a	n/a	14,881	9,827	5,054
1964	286,169	n/a	n/a	223,002	n/a	n/a	63,167	n/a	n/a	45,692	n/a	n/a	17,475	n/a	n/a
1965	279,371	n/a	n/a	213,042	n/a	n/a	66,329	n/a	n/a	45,982	n/a	n/a	20,347	n/a	n/a
1966	301,921	n/a	n/a	231,977	n/a	n/a	69,944	n/a	n/a	46,512	n/a	n/a	23,432	n/a	n/a
1967	311,535	n/a	n/a	239,725	161,555	78,170	71,910	n/a	n/a	47,563	n/a	n/a	24,347	n/a	n/a
1968	327,940	n/a	n/a	251,170	173,606	77,564	76,770	n/a	n/a	49,273	n/a	n/a	27,497	n/a	n/a
1969	358,166	n/a	n/a	279,160	200,825	78,335	79,006	n/a	n/a	50,510	n/a	n/a	28,496	n/a	n/a
1970	384,382	n/a	n/a	299,553	220,073	79,480	84,829	n/a	n/a	53,986	n/a	n/a	30,843	n/a	n/a
1971	414,650	n/a	n/a	325,018	242,058	82,960	89,632	n/a	n/a	57,029	n/a	n/a	32,603	n/a	n/a
1972	438,671	318,900	119,771	343,587	259,492	84,095	95,084	59,408	35,676	60,881	34,369	26,512	34,203	25,039	9,164
1973	480,055	350,954	129,101	379,268	288,109	91,159	100,787	62,845	37,942	65,899	37,390	28,509	34,888	25,455	9,433
1974	510,603	376,292	134,311	404,881	309,900	94,981	105,722	66,392	39,330	69,611	40,021	29,590	36,111	26,371	9,740
1975	537,075	399,593	137,482	424,539	328,697	95,842	112,536	70,896	41,640	74,222	42,731	31,491	38,314	28,165	10,149
1976	556,279	417,056	139,223	439,946	343,184	96,762	116,333	73,872	42,461	77,011	44,949	32,062	39,322	28,923	10,399
1977	556,064	n/a	n/a	437,525	n/a	n/a	118,539	75,623	42,916	79,279	46,657	32,622	39,260	28,966	10,294
1978	546,542	n/a	n/a	420,686	n/a	n/a	125,856	80,095	45,761	81,934	48,730	33,204	43,922	31,365	12,557
1979	517,123	n/a	n/a	388,833	n/a	n/a	128,290	81,698	46,592	84,761	50,681	34,080	43,529	31,017	12,512
1980	507,798	n/a	n/a	378,161	n/a	n/a	129,637	82,498	47,139	86,502	51,830	34,672	43,135	30,668	12,467
1981	501,907	n/a	n/a	371,272	n/a	n/a	130,635	83,477	47,158	88,254	53,194	35,060	42,381	30,283	12,098
1982	498,006	n/a	n/a	367,128	n/a	n/a	130,878	83,484	47,394	89,105	53,693	35,412	41,773	29,791	11,982
1983	502,999	n/a	n/a	372,687	n/a	n/a	130,312	82,580	47,732	89,121	53,609	35,512	41,191	28,971	12,220
1984	505,437	n/a	n/a	375,269	n/a	n/a	130,168	81,820	48,348	88,865	52,372	36,493	41,303	29,448	11,855
1985	n/a	n/a	n/a	n/a	n/a	n/a	130,106	81,492	48,614	87,674	51,580	36,094	42,432	29,912	12,520
1986	n/a	n/a	n/a	n/a	n/a	n/a	129,407	81,077	48,330	86,170	50,614	35,556	43,237	30,463	12,774
1987	n/a	n/a	n/a	n/a	n/a	n/a	129,086	80,966	48,120	84,591	49,593	34,998	44,495	31,373	13,122

(See footnotes on the following page)

APPENDIX TABLE B1 Continued

1/ Biomedical science undergraduate, graduate, and dental student enrollments for Temple University and the University of Pittsburg were counted as public; medical school enrollments were counted as private. The Association of American Medical Colleges, which provided the medical school data, was the only data source which considered those universities to be privately controlled.

2/ Estimated by the formula $U_i = (A_{i+2}/B_{i+2})C_i$, where U_i = biomedical science undergraduate enrollment in year i; A_{i+2} = biomedical science baccalaureate degrees awarded in year i+2 excluding health professions); B_{i+2} = total baccalaureate degrees awarded in year i+2; C_i = total undergraduate degree-credit enrollment in year i (excluding first professional). Public and private estimates were based on enrollment ratios. See Appendix Tables B3 and B4 for supporting data.

3/ Medical school enrollment figures were obtained from the Association of American Medical Colleges (1972-88, special annual tabulations) and the American Medical Association (1960-88). Dental school enrollment figures were obtained from the American Dental Association (1969-88).

4/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-87 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure which was interpolated. Because of differences in taxonomy, NSF numbers for 1978-87 total biomedical science graduate students may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 42,495 graduate students enrolled in the biomedical sciences; in comparison, the Department of Education reported a somewhat lower figure of 39,260 (as shown in this table).

APPENDIX TABLE B2. First-Year Graduate Enrollment in the Biomedical Sciences, 1960-87

Fiscal Year	Total First-Year Enrollment 1/	First-Year Full-Time Enrollment 2/
1960	5,370	n/a
1961	6,025	n/a
1962	6,642	n/a
1963	7,137	n/a
1964	8,542	n/a
1965	10,430	n/a
1966	12,034	n/a
1967	12,511	n/a
1968	13,301	n/a
1969	13,343	n/a
1970	14,836	n/a
1971	15,845	n/a
1972	16,722	n/a
1973	17,511	n/a
1974	17,538	n/a
1975	18,876	9,362
1976	18,756	9,918
1977	18,073	9,763
1978	n/a	9,612
1979	n/a	8,836
1980	n/a	8,348
1981	n/a	8,279
1982	n/a	8,105
1983	n/a	8,043
1984	n/a	8,320
1985	n/a	8,451
1986	n/a	8,529
1987	n/a	8,609

1/ From the U.S. Department of Education (1959-79).

2/ From the National Science Foundation (1973-88a). Represents doctorate-granting institutions only.

APPENDIX TABLE B3. Biomedical Science Degrees Awarded in Colleges and Universities, by Type of Institutional Control, and Postdoctoral Appointments in All Employment Sectors, 1960-1987

Fiscal Year	B.A. Degrees Awarded 1/ (excluding first professional)			Ph.D. Degrees Awarded 2/			Postdoctoral Appointments 3/				
								Academic 4/			
	Total	Public	Private	Total	Public	Private	Total	Total	Public	Private	Nonacademic
1960	n/a	n/a	n/a	1,096	n/a	n/a					
1961	15,588	n/a	n/a	1,138	n/a	n/a					
1962	16,424	n/a	n/a	1,272	n/a	n/a					
1963	18,704	n/a	n/a	1,341	n/a	n/a					
1964	22,207	n/a	n/a	1,552	n/a	n/a					
1965	24,612	n/a	n/a	1,753	n/a	n/a					
1966	26,336	n/a	n/a	1,961	n/a	n/a					
1967	28,157	n/a	n/a	2,181	n/a	n/a					
1968	31,221	n/a	n/a	2,545	n/a	n/a					
1969	34,795	20,338	14,457	2,854	n/a	n/a					
1970	36,868	22,382	14,486	3,171	n/a	n/a					
1971	40,000	24,611	15,389	3,482	n/a	n/a					
1972	42,000	26,208	15,792	3,460	2,385	1,075					
1973	45,000	28,236	16,764	3,520	2,466	1,054	3,607	2,883	1,636	1,247	724
1974	47,434	29,881	17,553	3,417	2,327	1,090	n/a	n/a	n/a	n/a	n/a
1975	50,493	31,841	18,652	3,515	2,401	1,114	5,369	4,361	2,530	1,831	1,008
1976	52,642	33,244	19,398	3,578	2,447	1,131	n/a	n/a	n/a	n/a	n/a
1977	51,783	32,789	18,994	3,465	2,386	1,079	6,312	5,211	2,836	2,375	1,101
1978	49,701	30,968	18,733	3,518	2,440	1,078	n/a	n/a	n/a	n/a	n/a
1979	47,717	29,241	18,476	3,644	2,466	1,178	7,268	5,974	3,543	2,431	1,294
1980	45,106	27,279	17,827	3,823	2,632	1,191	n/a	n/a	n/a	n/a	n/a
1981	42,297	25,380	16,917	3,846	2,599	1,247	8,026	6,740	4,064	2,676	1,286
1982	40,750	24,167	16,583	3,960	2,673	1,287	n/a	n/a	n/a	n/a	n/a
1983	38,322	n/a	n/a	3,788	2,621	1,166	7,827	6,208	3,287	2,921	1,619
1984	37,115	n/a	n/a	3,902	2,665	1,236	n/a	n/a	n/a	n/a	n/a
1985	37,364	n/a	n/a	3,787	2,569	1,217	8,364	n/a	n/a	n/a	n/a
1986	37,597	n/a	n/a	3,864	2,621	1,240	n/a	n/a	n/a	n/a	n/a
1987	37,284	n/a	n/a	3,969	2,650	1,318	8,172	n/a	n/a	n/a	n/a

1/ Figures for 1961-68 were obtained from the U.S. Department of Education (1948-81); those for 1969-82 from the U.S. Department of Education (1948-88); those for 1983-87 from the U.S. Department of Education (1974-87). Figures for 1971-73 were estimated by the committee in order to remove the distortion produced in the series by the change in the survey taxonomy in 1971. Health professions are not included.

2/ From the National Research Council's Doctorate Records File (1958-88). Foreign nationals who received doctorates from U.S. institutions are included.

3/ Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

4/ Public and private figures were adjusted by the committee to include a small number of individuals for whom control of institution could not be determined.

APPENDIX TABLE B4. Total Undergraduate Degree-Credit Enrollment, Total B.A. Degrees Awarded, and Ratio of Biomedical Science B.A.s to Total B.A.s, by Type of Institutional Control, 1960-87

Fiscal Year	Total Undergraduate Degree-Credit Enrollment (thousands) 1/						B.A. Degrees Awarded 4/ (excluding first professional)			Ratio of Biomed. Sci. B.A.'s to Total B.A.s 5/
	Including First Professional 2/			Excluding First Professional 3/						
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1960	3,402	n/a	n/a	3,334	n/a	n/a	n/a	n/a	n/a	n/a
1961	3,610	n/a	n/a	3,538	n/a	n/a	365,337	n/a	n/a	0.0427
1962	3,891	n/a	n/a	3,813	n/a	n/a	382,822	n/a	n/a	0.0429
1963	4,207	n/a	n/a	4,123	n/a	n/a	410,421	n/a	n/a	0.0456
1964	4,529	n/a	n/a	4,438	n/a	n/a	460,467	n/a	n/a	0.0482
1965	4,342	2,802	1,541	4,255	n/a	n/a	492,984	n/a	n/a	0.0499
1966	4,829	3,184	1,645	4,732	n/a	n/a	524,117	n/a	n/a	0.0502
1967	5,160	3,451	1,709	5,057	3,408	1,649	562,369	n/a	n/a	0.0501
1968	5,557	3,810	1,747	5,437	3,758	1,679	636,863	n/a	n/a	0.0490
1969	6,043	4,308	1,735	5,905	4,248	1,657	734,002	466,133	267,869	0.0474
1970	6,529	4,749	1,780	6,377	4,685	1,692	798,070	523,442	274,628	0.0462
1971	6,889	5,076	1,813	6,719	5,004	1,715	846,110	562,345	283,765	0.0473
1972	7,104	5,302	1,802	6,913	5,221	1,692	894,110	604,471	289,639	0.0470
1973	7,199	5,401	1,799	6,998	5,316	1,682	930,272	636,378	293,894	0.0484
1974	7,396	5,589	1,807	7,187	5,501	1,686	954,376	657,455	296,921	0.0497
1975	7,833	5,986	1,847	7,610	5,892	1,718	931,663	640,524	291,139	0.0542
1976	8,468	6,520	1,948	8,234	6,423	1,811	934,443	640,799	293,644	0.0563
1977 4/	8,786	n/a	n/a	8,540	n/a	n/a	928,228	635,909	292,319	0.0558
1978	9,022	n/a	n/a	8,769	n/a	n/a	930,201	633,183	297,018	0.0534
1979	8,963	n/a	n/a	8,705	n/a	n/a	931,340	627,084	304,256	0.0512
1980	9,211	n/a	n/a	8,946	n/a	n/a	940,251	629,338	310,913	0.0480
1981	9,672	n/a	n/a	9,393	n/a	n/a	946,877	632,168	314,709	0.0447
1982	9,914	n/a	n/a	9,638	n/a	n/a	964,043	641,751	322,292	0.0423
1983	10,050	n/a	n/a	9,770	n/a	n/a	969,510	n/a	n/a	0.0395
1984	10,140	n/a	n/a	9,860	n/a	n/a	974,309	n/a	n/a	0.0381
1985	9,928	n/a	n/a	9,647	n/a	n/a	979,477	n/a	n/a	0.0381
1986	9,838	n/a	n/a	9,561	n/a	n/a	987,823	n/a	n/a	0.0381
1987	10,168	n/a	n/a	9,894	n/a	n/a	991,264	659,260	332,004	n/a

1/ The Department of Education last collected data on "degree-credit" enrollment in FY 1976; beginning in FY 1977, the survey collected data on "unclassified undergraduates", defined as non-degree-seeking students. Beginning in FY 1977, undergraduate degree-credit enrollment is defined as total undergraduate enrollment excluding unclassified undergraduates.

2/ Figures for 1960-64 were obtained from the U.S. Department of Education (1961-84), those for 1965-75 from the U.S. Department of Education, (1973-82), and the one for 1976 from the U.S. Department of Education (1974-87). Figures for 1977-87 are from the U.S. Department of Education (1961-88).

3/ Figures for 1960-66 were estimated at 98% of total undergraduate degree-credit enrollment (including first professional). Those for 1967-76 were obtained by subtracting first professional enrollment from total degree-credit undergraduate enrollment (including first professional). First professional enrollment data for 1967-76 were obtained from the U.S. Department of Education (1959-79), data for 1977-87 from the U.S. Department of Education (1961-88).

4/ Figures for 1961-68 were obtained from the U.S. Department of Education (1948-81), those for 1969-82 from the U.S. Department of Education (1948-88); those for 1983-87 from the U.S. Department of Education (1974-87).

5/ See Appendix Table B3 for number of baccalaureate degrees awarded in the biomedical sciences.

APPENDIX TABLE B5. Ph.D.s Employed in the Biomedical Sciences, 1973-87 1/

Fiscal Year	Total Labor Force	Total Academia (excluding postdocs.)	Postdoc. Appts.	Business	Gov't.	FFRDC Labs	Hospitals/ Clinics	Non-Profit	Self-Employed	Other	Unemployed and Seeking
1973	43,688	25,471	3,807	5,369	4,338	1,031	1,431	1,293	518	186	444
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	50,620	28,332	5,369	6,662	4,517	994	1,948	1,232	840	194	532
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	55,031	30,384	6,312	6,893	4,568	1,040	2,297	1,543	862	335	797
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	62,332	33,566	7,268	8,455	5,080	1,079	2,726	1,858	1,185	439	676
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	68,806	36,482	8,026	9,928	5,398	1,236	2,799	2,088	1,857	225	767
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	71,423	36,963	7,827	11,819	5,988	661	2,946	2,102	1,910	255	952
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	79,515	41,032	8,364	13,706	6,479	783	3,307	2,460	2,254	302	828
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	85,339	43,025	8,172	15,928	7,049	909	3,629	2,651	2,634	437	905

1/ Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

APPENDIX TABLE B6. National Expenditures for Health-Related R and D, 1960-89 1/ ($ millions)

Fiscal Year	Current Dollars				1972 Dollars				Implicit Price Deflator 2/ (1972 = 100.0)
	Total	Federal	Private Industry	Other	Total	Federal	Private Industry	Other	
1960	886	448	253	185	1,290	652	368	269	68.70
1961	1,087	574	312	201	1,569	828	450	290	69.30
1962	1,333	782	336	215	1,891	1,109	477	305	70.50
1963	1,526	919	375	232	2,131	1,284	524	324	71.60
1964	1,698	1,049	400	249	2,336	1,443	550	343	72.70
1965	1,890	1,174	450	266	2,544	1,580	606	358	74.30
1966	2,111	1,316	510	285	2,749	1,714	664	371	76.80
1967	2,345	1,459	580	306	2,968	1,847	734	387	79.00
1968	2,568	1,582	661	325	3,109	1,915	800	393	82.60
1969	2,785	1,674	754	357	3,212	1,931	870	412	86.70
1970	2,847	1,667	795	385	3,115	1,824	870	421	91.40
1971	3,168	1,877	860	431	3,300	1,955	896	449	96.00
1972	3,536	2,147	934	455	3,536	2,147	934	455	100.00
1973	3,750	2,225	1,048	477	3,544	2,103	991	451	105.80
1974	4,443	2,754	1,183	506	3,830	2,374	1,020	436	116.00
1975	4,701	2,832	1,319	550	3,696	2,226	1,037	432	127.20
1976	5,107	3,059	1,469	579	3,814	2,285	1,097	432	133.90
1977	5,568	3,396	1,614	558	3,929	2,397	1,139	394	141.70
1978	6,262	3,811	1,800	651	4,118	2,506	1,184	428	152.05
1979	7,133	4,321	2,093	719	4,311	2,612	1,265	435	165.46
1980	7,935	4,723	2,459	754	4,447	2,647	1,378	423	178.42
1981	8,703	4,848	2,998	856	4,460	2,484	1,536	439	195.14
1982	9,483	4,970	3,561	952	4,584	2,402	1,721	460	206.88
1983	10,634	5,399	4,145	1,089	4,932	2,504	1,922	505	215.63
1984	12,014	6,087	4,643	1,284	5,377	2,724	2,078	575	223.43
1985	13,408	6,791	5,244	1,374	5,809	2,942	2,272	595	230.80
1986	14,801	6,895	6,166	1,740	6,244	2,909	2,601	734	237.04
1987	16,827	7,827	7,130	1,871	6,872	3,197	2,912	764	244.86
1988 (est.)	18,729	8,454	8,260	2,016	7,462	3,368	3,291	803	250.98
1989 (proj.)	20,575	9,207	9,259	2,109	n/a	n/a	n/a	n/a	n/a

1/ From NIH Data Book (1966-88, and pre-publication). Items may not sum to totals due to rounding.

2/ From the U.S. Bureau of the Census (1988a,b).

APPENDIX TABLE B7. NIH Research Grant Expenditures, 1965-88 1/ ($ millions)

Fiscal Year	Total NIH Research Grant Expenditures		NIH Research Grant Expenditures in U.S. Colleges and Universities					
			Current Dollars			1972 Dollars 2/		
	Current Dollars	1972 Dollars 2/	Total	Public	Private	Total	Public	Private
1965	492.1	662.3	n/a	n/a	n/a	n/a	n/a	n/a
1966	551.2	717.7	n/a	n/a	n/a	n/a	n/a	n/a
1967	618.4	782.8	n/a	n/a	n/a	n/a	n/a	n/a
1968	647.0	783.3	n/a	n/a	n/a	n/a	n/a	n/a
1969	649.1	748.7	n/a	n/a	n/a	n/a	n/a	n/a
1970	624.3	683.0	n/a	n/a	n/a	n/a	n/a	n/a
1971	699.7	728.9	n/a	n/a	n/a	n/a	n/a	n/a
1972	826.5	826.5	676.7	339.7	337.0	676.7	676.7	676.7
1973	838.5	792.5	680.7	332.2	348.5	643.4	314.0	329.4
1974	1,100.8	949.0	885.0	448.7	436.3	762.9	386.8	376.1
1975	1,148.0	902.5	927.3	469.1	458.2	729.0	368.8	360.2
1976	1,275.8	952.8	1,025.4	516.1	509.3	765.8	385.4	380.4
1977	1,435.7	1,013.2	1,148.8	577.5	571.3	810.7	407.6	403.2
1978	1,638.0	1,077.3	1,322.4	668.4	654.0	869.7	439.6	430.1
1979	1,951.7	1,179.6	1,579.7	808.6	771.1	954.7	488.7	466.0
1980	2,161.1	1,211.2	1,742.6	893.2	849.5	976.7	500.6	476.1
1981	2,331.4	1,194.7	1,882.6	963.7	918.9	964.7	493.9	470.9
1982	2,407.7	1,163.8	1,937.8	991.2	946.6	936.7	479.1	457.6
1983	2,702.3	1,253.2	2,175.7	1,097.4	1,078.3	1,009.0	508.9	500.1
1984	3,087.0	1,381.6	2,470.1	1,254.9	1,217.9	1,105.5	561.7	545.1
1985	3,591.3	1,556.0	2,870.2	n/a	n/a	1,243.6	n/a	n/a
1986	3,739.1	1,577.4	2,974.9	n/a	n/a	1,255.0	n/a	n/a
1987	4,401.2	1,797.4	3,477.6	n/a	n/a	1,420.2	n/a	n/a
1988	4,727.3	1,883.5	3,731.0	n/a	n/a	1,486.6	n/a	n/a

1/ From NIH Data Book (1966-88, and pre-publication). Items may not sum to totals due to rounding.

2/ From the U.S. Bureau of the Census (1988a,b).

APPENDIX TABLE B8. Biomedical Science R and D Expenditures in Colleges and Universities, by Type of Institutional Control, 1960-87 ($ millions)

Fiscal Year	Current Dollars 1/			1972 Dollars 2/			Weighted Sum of Biomed. Sci. R and D Expend. in Last 3 Yrs. 3/ (Total, 1972 Dollars)
	Total	Public	Private	Total	Public	Private	
1960	287.4	n/a	n/a	418.3	n/a	n/a	383.5
1961	339.4	n/a	n/a	489.8	n/a	n/a	422.6
1962	402.2	n/a	n/a	570.5	n/a	n/a	492.1
1963	480.9	n/a	n/a	671.6	n/a	n/a	575.6
1964	565.7	n/a	n/a	778.1	n/a	n/a	673.0
1965	638.0	n/a	n/a	858.7	n/a	n/a	771.6
1966	724.0	n/a	n/a	942.7	n/a	n/a	859.5
1967	795.0	n/a	n/a	1,006.3	n/a	n/a	937.6
1968	860.7	n/a	n/a	1,042.0	n/a	n/a	999.3
1969	917.3	n/a	n/a	1,058.0	n/a	n/a	1,037.1
1970	991.2	n/a	n/a	1,084.5	n/a	n/a	1,060.6
1971	1,054.7	n/a	n/a	1,098.6	n/a	n/a	1,081.4
1972	1,102.2	600.5	501.7	1,102.2	600.5	501.7	1,096.0
1973	1,252.9	691.2	561.8	1,184.2	653.3	531.0	1,121.8
1974	1,284.3	691.4	592.8	1,107.2	596.0	511.0	1,144.4
1975	1,517.0	825.5	691.5	1,192.6	649.0	543.6	1,147.8
1976	1,688.8	937.9	750.9	1,261.2	700.4	560.8	1,188.4
1977	1,798.2	1,002.3	795.9	1,269.0	707.3	561.7	1,246.0
1978	2,038.8	1,158.3	880.5	1,340.9	761.8	579.1	1,285.0
1979	2,230.0	1,238.5	991.5	1,347.8	748.5	599.2	1,324.6
1980	2,536.8	1,433.1	1,105.7	1,422.9	803.2	619.7	1,364.8
1981	2,906.9	1,669.5	1,237.4	1,489.6	855.5	634.1	1,420.8
1982	3,151.1	1,806.8	1,344.2	1,523.2	873.4	649.7	1,481.3
1983	3,386.5	1,968.0	1,418.6	1,570.5	912.7	657.9	1,526.6
1984	3,760.0	2,216.4	1,543.6	1,682.9	992.0	690.9	1,586.8
1985	4,223.0	2,490.6	1,732.4	1,829.7	1,079.1	750.6	1,691.5
1986	4,750.3	2,803.9	1,946.4	2,004.0	1,182.9	821.1	1,836.6
1987	5,309.2	3,119.4	2,189.7	2,168.3	1,274.0	894.3	2,001.5

1/ Figures for 1972-87 were obtained from the National Science Foundation (1975-88). The 1978 figures are NSF estimates. Items may not sum to totals due to rounding.

2/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census--see Appendix Table A7). Items may not sum to totals due to rounding.

3/ Computed by the formula 1/4(Rt + 2Rt-1 + Rt-2), where R = total biomedical science R and D expenditures (1972 dollars).

APPENDIX TABLE B9. Average Biomedical Science R and D Expenditures per School in Colleges and Universities, by Type of Institutional Control, 1972-87 1/ (1972 $, thousands)

Fiscal Year	Average R and D Expenditures			Number of Schools Reporting 2/		
	Total	Public	Private	Total	Public	Private
1972	1,865	1,793	1,960	591	335	256
1973	2,004	1,950	2,074	591	335	256
1974	1,858	1,774	1,966	596	336	260
1975	2,225	2,009	2,552	536	323	213
1976	2,357	2,175	2,633	535	322	213
1977	2,368	2,197	2,625	536	322	214
1978	2,386	2,301	2,507	562	331	231
1979	2,385	2,255	2,572	565	332	233
1980	2,532	2,419	2,683	562	332	231
1981	2,665	2,577	2,745	559	332	231
1982	2,730	2,631	2,813	558	332	231
1983	2,795	2,757	2,848	562	331	231
1984	3,000	n/a	n/a	561	n/a	n/a
1985	3,262	n/a	n/a	561	n/a	n/a
1986	3,572	n/a	n/a	561	n/a	n/a
1987	3,858	n/a	n/a	562	n/a	n/a

1/See Appendix Table B9 for supporting data.

2/From the National Science Foundation (1975-88). For 1978, the number of doctorate-granting institutions was obtained from NSF; the number of master's-granting institutions was estimated by the committee. Beginning in FY 1984, data were collected from a sample of 400 institutions and inflated to produce universe estimates.

APPENDIX TABLE B10. Indirect Costs of NIH-Sponsored Research Grants at Institutions of Higher Education, 1970-88 1/

	All Institutions of Higher Education		Public Schools		Private Schools	
Fiscal Year	% of Direct Costs	% of Total Costs	% of Direct Costs	% of Total Costs	% of Direct Costs	% of Total Costs
1970	25.7	20.5	26.6	21.0	24.9	19.9
1971	27.2	21.4	28.2	22.0	26.3	20.8
1972	28.7	22.3	28.9	22.4	28.5	22.2
1973	30.0	23.1	29.6	22.8	30.4	23.3
1974	31.8	24.1	30.4	23.3	33.2	24.9
1975	32.4	24.5	30.2	23.2	34.8	25.8
1976	34.6	25.7	31.7	24.1	37.6	27.4
1977	36.5	26.7	32.7	24.6	40.5	28.8
1978	37.4	27.2	33.0	24.8	42.1	29.6
1979	39.0	28.1	34.2	25.5	44.3	30.7
1980	40.8	29.0	34.7	25.8	47.8	32.3
1981	42.4	29.8	35.8	26.3	49.9	33.3
1982	43.3	30.2	36.3	26.6	51.4	34.0
1983	45.0	31.0	37.3	27.2	53.6	34.9
1984	45.8	31.4	38.5	27.8	54.0	35.1
1985	45.9	31.5	38.5	27.8	54.6	35.3
1986	46.2	31.6	39.3	28.2	54.3	35.2
1987	46.0	31.5	39.6	28.4	53.6	34.9
1988	45.7	31.3	40.2	28.7	52.0	34.2
Average Annual Growth Rate 1970-88	3.2%	2.4%	2.3%	1.8%	4.2%	3.1%

1/ From NIH Data Book (1966-88 and pre-publication). Represents awards, not obligations. Unobligated balances from prior years' awards are carried forward as direct costs and therefore excluded. Also excludes RCPAs, BRS and BRD grants, conference grants, NCI education grants, and awards to minority student apprentice programs.

APPENDIX TABLE B11. Ph.D.s Academically Employed in the Biomedical Sciences, by Employment Status and Type of Institution, 1973-87 1/

Fiscal Year	Employment Status	Type of Institution		
		Total	4-Year	2-Year
1973	Total	25,471	24,960	511
	Full-Time	24,724	24,241	483
	Part-Time	747	719	28
1975	Total	28,332	27,709	623
	Full-Time	27,487	26,919	568
	Part-Time	845	790	55
1977	Total	30,384	29,604	780
	Full-Time	29,473	28,768	705
	Part-Time	911	836	75
1979	Total	33,566	32,744	822
	Full-Time	32,550	31,802	749
	Part-Time	1,015	942	73
1981	Total	36,482	35,644	838
	Full-Time	35,462	34,701	761
	Part-Time	1,020	943	77
1983	Total	36,963	35,973	990
	Full-Time	35,781	34,884	897
	Part-Time	1,182	1,089	93
1985	Total	41,033	39,955	1,078
	Full-Time	39,665	38,679	985
	Part-Time	1,369	1,276	92
1987	Total	43,022	42,200	822
	Full-Time	41,438	40,708	730
	Part-Time	1,584	1,492	92
Average Annual Growth Rate from 1973-87	Total	3.8%	3.8%	3.5%
	Full-Time	3.8%	3.8%	3.0%
	Part-Time	5.5%	5.4%	8.9%

1/ Based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included. Individuals on postdoctoral appointments are excluded.

APPENDIX TABLE B12-1. Permanent Attrition Rates of U.S. Medical School Faculty, by Department and Degree Type, 1970-88 1/

Fiscal Year	All Departments				Clinical Departments				Basic Science Departments			
	Total	M.D.s	Ph.D.s	Other	Total	M.D.s	Ph.D.s	Other	Total	M.D.s	Ph.D.s	Other
1970	5.0	5.1	3.6	7.6	5.7	5.4	6.1	7.1	4.0	5.8	2.8	5.4
1971	5.3	5.6	3.8	7.0	6.1	5.9	5.6	7.3	4.6	6.4	3.5	5.2
1972	6.4	6.2	5.1	9.8	6.8	6.5	6.7	8.8	6.0	7.1	5.4	5.9
1973	8.0	5.6	4.5	11.0	6.4	5.7	6.0	11.9	5.5	7.2	4.5	7.7
1974	5.5	5.5	4.0	9.2	5.9	5.6	5.8	8.4	4.9	6.7	3.9	6.2
1975	5.7	5.4	4.7	9.9	5.9	5.5	6.0	8.7	5.5	6.9	4.6	8.1
1976	6.4	6.3	5.0	10.9	6.8	6.5	6.5	10.6	5.9	7.1	5.0	9.9
1977	6.6	6.6	5.2	10.3	7.0	6.8	6.8	9.3	5.7	7.6	4.6	9.7
1978	5.9	5.7	4.5	11.5	6.2	5.8	6.2	9.6	5.2	7.0	4.3	7.6
1979	5.7	5.6	4.6	9.2	6.0	5.8	6.2	8.3	5.0	5.4	4.4	10.4
1980	5.6	5.6	4.8	8.6	5.9	5.7	5.7	8.1	5.4	6.2	4.9	9.0
1981	6.5	6.4	5.2	11.0	6.8	6.5	6.5	9.8	5.5	6.8	4.7	9.2
1982	6.3	6.1	5.5	10.5	6.5	6.2	6.9	9.5	5.9	6.5	5.1	14.7
1983	6.0	5.7	5.5	10.3	6.2	5.8	6.5	10.1	5.5	5.9	5.2	7.2
1984	5.8	5.6	5.6	8.1	6.0	5.7	6.7	8.2	5.0	5.9	4.5	7.0
1985	5.4	5.2	4.6	9.1	5.6	5.3	5.5	9.3	4.7	4.9	4.5	7.4
1986	4.8	5.0	4.0	6.5	5.2	5.1	5.0	6.5	4.0	4.1	3.8	6.1
1987	4.3	4.4	3.6	5.3	4.4	4.5	3.9	4.7	4.0	4.3	3.8	7.2
1988	0.3	0.3	0.2	0.8	0.3	0.3	0.2	0.6	0.2	0.2	0.2	0.2
Avg 1970-87	5.7	5.6	4.7	9.2	6.1	5.8	6.0	8.7	5.1	6.2	4.4	8.0

1/ Based on special analyses of the AAMC Medical School Faculty Roster as of March, 1988. Numbers represent percent of full-time faculty leaving the department each year for retirement, death or other reasons (permanent attrition). Analyses performed at NIH/OSPL/DPE/PPRB.

APPENDIX TABLE B12-2. One-Year-Out Attrition Rates of U.S. Medical School Faculty, by Department and Degree Type, 1970-88 1/

Fiscal Year	All Departments				Clinical Departments				Basic Science Departments			
	Total	M.D.s	PhD.s	Other	Total	M.D.s	PhD.s	Other	Total	M.D.s	PhD.s	Other
1970	6.2	6.6	4.6	7.9	6.9	6.8	7.1	7.3	5.0	7.3	3.6	5.4
1971	6.3	6.8	4.5	7.5	7.0	7.1	6.2	7.6	5.3	7.4	4.1	5.6
1972	7.5	7.5	6.2	10.3	7.8	7.7	7.5	9.2	6.7	8.0	6.1	6.1
1973	7.0	7.0	5.1	11.5	7.5	7.0	6.8	12.1	6.0	8.0	4.8	7.8
1974	6.4	6.4	4.9	9.5	6.8	6.6	6.6	8.6	5.5	7.3	4.5	6.5
1975	6.6	6.5	5.4	10.3	6.9	6.6	6.8	9.0	6.1	7.9	5.1	8.1
1976	7.3	7.3	5.8	11.3	7.7	7.4	7.3	10.9	6.5	8.1	5.5	9.9
1977	7.5	7.6	6.0	10.5	7.9	7.8	7.7	9.5	6.2	8.2	5.0	9.7
1978	6.7	6.6	5.2	11.7	7.0	6.7	6.8	9.8	5.7	7.6	4.7	7.9
1979	6.4	6.5	5.3	9.7	6.8	6.6	6.9	8.6	5.4	5.9	4.8	10.7
1980	6.3	6.4	5.4	8.8	6.6	6.5	6.4	8.3	5.7	6.6	5.2	9.0
1981	7.1	7.1	5.7	11.2	7.5	7.3	7.1	9.9	5.8	7.1	5.1	9.3
1982	6.9	6.8	6.0	10.7	7.2	6.9	7.3	9.7	6.3	6.8	5.4	14.7
1983	6.6	6.4	5.9	10.4	6.9	6.5	7.0	10.2	5.7	6.2	5.4	7.2
1984	6.3	6.2	6.0	8.2	6.6	6.3	7.1	8.4	5.2	6.1	4.7	7.2
1985	5.7	5.6	5.0	9.3	6.0	5.7	5.8	9.5	5.0	5.2	4.7	7.4
1986	5.1	5.2	4.2	6.6	5.4	5.4	5.0	6.7	4.1	4.3	3.9	6.1
1987	4.3	4.4	3.8	5.3	4.4	4.5	3.9	4.7	4.0	4.3	3.8	7.2
1988	0.3	0.3	0.2	0.8	0.3	0.3	0.2	0.6	0.2	0.2	0.2	0.2
Avg 1970-87	6.5	6.5	5.3	9.5	6.8	6.6	6.6	8.9	5.6	6.8	4.8	8.1

1/ Based on special analyses of the AAMC Medical School Faculty Roster as of March, 1988. Numbers represent percent of full-time faculty leaving the department for one year for any reason (one-year-out attrition). Analyses performed at NIH/OSPL/DPE/PPRB.

APPENDIX TABLE B13. Postdoctoral Research Training of New Faculty in U.S. Medical Schools, by Department and Degree Type, 1982-87 1/

Fiscal Year	All Departments		Clinical Departments		Basic Science Departments	
	M.D.s	Ph.Ds	M.D.s	Ph.D.s	M.D.s	Ph.D.s
1982	44.5	72.7	44.4	63.3	54.9	87.6
1983	43.6	73.4	41.6	61.2	48.5	89.9
1984	43.9	72.5	37.9	62.8	50.0	86.8
1985	41.5	72.2	39.9	62.8	49.5	87.3
1986	46.4	74.3	27.2	62.6	50.5	88.5
1987	35.3	53.7	19.2	60.1	46.7	85.1
Avg 1982-87	42.5	69.8	35.0	62.1	50.0	87.5

1/ Based on special analyses of the AAMC Medical School Faculty Roster as of March, 1988. Numbers represent percent of new full-time faculty with any reported postdoctoral research training. Data collected under the current survey format are available only since 1982.

APPENDIX TABLE B14. Graduate School Attrition Rates in the Biomedical Sciences, 1963-74

Fiscal Year of Graduate School Entry	First-Year Graduate Enrollment in the Biomed. Sci. 1/	Number of FY 1982-87 Biomedical Sci. Ph.D.s Entering Grad. School 2/	Ph.D. Completion Rate (%) 3/	Estimated Graduate School Attrition Rate (%) 3/
Pre-1963		16,314		
Post-1974		23,904		
1963	7,137	2,583	36.2	63.8
1964	8,542	3,096	36.2	63.8
1965	10,430	3,454	33.1	66.9
1966	12,034	3,814	31.7	68.3
1967	12,511	3,762	30.1	69.9
1968	13,301	3,591	27.0	73.0
1969	13,343	3,430	25.7	74.3
1970	14,835	3,551	23.9	76.1
1971	15,845	3,625	22.9	77.1
1972	16,722	3,633	21.7	78.3
1973	17,511	3,822	21.8	78.2
1974	17,538	3,737	21.3	78.7

1/From the U.S. Department of Education (1969-79).

2/From the National Research Council's Doctorate Records File (1958-88).

3/The Ph.D. completion rate represents the percentage of first-year graduate students in a given year who earned a Ph.D. between 1982 and 1987 (column 2/column 1). The attrition rate is obtained by subtracting the Ph.D. completion rate for a given year from 100.0%. The rates for 1960-64 are relatively constant (see 1985 Report), indicating that most individuals entering graduate school during that period had either received a Ph.D. or dropped out of graduate school by 1987. For later years, the Ph.D. completion rates decline with each year. The attrition rates for these years undoubtedly include students who are still enrolled in graduate school but who had not earned a Ph.D. by 1987, as well as those who had actually dropped out of graduate school. The median elapsed time from baccalaureate to bioscience doctorate degree in 1987 was 8.1 years; it is therefore probable that many of the graduate students entering in years after 1980 are still working toward a doctorate degree. Completion and attrition rates have not been calculated for the later years. The Ph.D. completion rates will most likely increase and the attrition rates decrease once 1988 Ph.D.s are added to the calculations, and should continue to do so with the inclusion of each additional year of Ph.D.s.

APPENDIX TABLE B15. Percent of the Postdoctoral Population in the Biomedical Sciences Who Had Earned Their Doctorates More Than 2, 3, or 4 Years Earlier, 1973-87 1/

Fiscal Year	Total Postdocs	Number of Years Since Ph.D.					
		> 2 Years		> 3 Years		> 4 Years	
		N	%	N	%	N	%
1973	2,623	1,123	42.8	577	22.0	343	13.1
1975	4,316	2,239	51.9	1,334	30.9	843	19.5
1977	5,142	2,782	54.1	1,715	33.4	1,051	20.4
1979	6,106	3,530	57.8	2,345	38.4	1,532	25.1
1981	6,759	3,695	54.7	2,369	35.0	1,544	22.8
1983	6,579	3,503	53.2	2,309	35.1	1,432	21.8
1985	7,034	4,210	59.9	2,934	41.7	1,831	26.0
1987	6,872	3,847	56.0	2,445	35.6	1,578	23.0

1/Based on special analyses by National Research Council staff of the Survey of Doctorate Recipients (1973-1988).

APPENDIX TABLE C1. Behavioral Science Enrollments in Colleges and Universities, by Type of Institutional Control, 1960-87 1/

	Total Undergraduate and Graduate Enrollment			Estimated Undergraduate Enrollment 2/			Graduate Enrollment 3/		
Fiscal Year	Total	Public	Private	Total	Public	Private	Total	Public	Private
1960	172,976	n/a	n/a	160,228	n/a	n/a	12,748	n/a	n/a
1961	194,799	n/a	n/a	179,839	n/a	n/a	14,960	n/a	n/a
1962	225,475	n/a	n/a	210,099	n/a	n/a	15,376	n/a	n/a
1963	257,638	n/a	n/a	241,032	n/a	n/a	16,606	n/a	n/a
1964	304,375	n/a	n/a	285,593	n/a	n/a	18,782	n/a	n/a
1965	316,575	n/a	n/a	295,626	n/a	n/a	20,949	n/a	n/a
1966	382,904	n/a	n/a	358,840	n/a	n/a	24,064	n/a	n/a
1967	431,820	n/a	n/a	406,763	n/a	n/a	25,057	n/a	n/a
1968	495,958	n/a	n/a	466,075	n/a	n/a	29,883	n/a	n/a
1969	565,817	n/a	n/a	531,814	n/a	n/a	34,003	n/a	n/a
1970	637,063	n/a	n/a	600,555	n/a	n/a	36,508	n/a	n/a
1971	706,924	n/a	n/a	666,568	496,429	170,139	40,356	n/a	n/a
1972	750,453	563,722	186,731	705,746	533,011	172,735	44,707	30,711	13,996
1973	743,829	561,782	182,047	695,613	528,419	167,194	48,216	33,363	14,853
1974	724,277	550,163	174,114	672,565	514,787	157,778	51,712	35,376	16,336
1975	723,479	554,594	168,885	668,096	517,270	150,826	55,383	37,324	18,059
1976	730,900	564,051	166,849	671,844	524,078	147,766	59,056	39,973	19,083
1977	721,816	n/a	n/a	663,527	n/a	n/a	58,289	38,676	19,613
1978	712,713	n/a	n/a	648,933	n/a	n/a	63,780	43,153	20,627
1979	676,603	n/a	n/a	612,802	n/a	n/a	63,801	42,710	21,091
1980	668,593	n/a	n/a	604,773	n/a	n/a	63,820	42,264	21,556
1981	658,407	n/a	n/a	593,627	n/a	n/a	64,780	41,993	22,787
1982	654,146	n/a	n/a	589,815	n/a	n/a	64,331	41,701	22,630
1983	637,570	n/a	n/a	574,462	n/a	n/a	63,108	40,965	22,143
1984	647,413	n/a	n/a	583,700	n/a	n/a	63,713	41,406	22,307
1985	n/a	n/a	n/a	n/a	n/a	n/a	65,640	43,300	22,341
1986	n/a	n/a	n/a	n/a	n/a	n/a	65,269	42,813	22,459
1987	n/a	n/a	n/a	n/a	n/a	n/a	65,100	42,879	22,221

1/ Behavioral sciences include psychology, sociology, anthropology, and speech pathology/audiology. Figures are higher than those presented in the 1983 Report because speech pathology/audiology is now included in the taxonomy.

2/ Sum of estimated undergraduate enrollments in psychology, sociology, anthropology, and speech pathology/audiology. See Appendix Tables C4-6 and C8 for supporting data.

3/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-87 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure, which was interpolated. Due to differences in taxonomy, NSF numbers for 1978-87 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 62,699 graduate students enrolled in the behavioral sciences; in comparison, the Department of Education reported a somewhat lower figure of 58,289 (as shown in this table).

APPENDIX TABLE C2. Graduate Enrollment in Clinical Psychology, Nonclinical Psychology, and Other Behavioral Sciences, and Ratio of Clinical Psychology Ph.D.s to Total Psychology Ph.D.s, by Type of Institutional Control, 1960-88

	Graduate Enrollment 1/									Ratio of Clinical Psychology Ph.D.s to Total Psychology Ph.D.s 4/
	Clinical Psychology 2/			Nonclinical Psychology 2/			Other Behavioral Sciences 3/			
Fiscal Year	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1960	3,788	1,962	1,826	5,169	2,677	2,492	3,791	1,977	1,814	0.4067
1961	4,403	2,301	2,102	6,274	3,279	2,995	4,283	2,401	1,882	0.4646
1962	4,978	2,638	2,340	5,773	3,060	2,713	4,625	2,595	2,030	0.4229
1963	4,733	2,655	2,078	6,611	3,708	2,903	5,262	3,093	2,169	0.4124
1964	4,867	n/a	n/a	7,760	n/a	n/a	6,155	n/a	n/a	0.4630
1965	5,610	n/a	n/a	8,123	n/a	n/a	7,216	n/a	n/a	0.4172
1966	6,511	n/a	n/a	9,040	n/a	n/a	8,513	n/a	n/a	0.3854
1967	5,949	n/a	n/a	9,736	n/a	n/a	9,372	n/a	n/a	0.4085
1968	7,139	n/a	n/a	11,925	n/a	n/a	10,819	n/a	n/a	0.4187
1969	8,525	n/a	n/a	13,118	n/a	n/a	12,360	n/a	n/a	0.3793
1970	9,160	n/a	n/a	13,566	n/a	n/a	13,782	n/a	n/a	0.3745
1971	10,877	n/a	n/a	14,465	n/a	n/a	15,014	n/a	n/a	0.3939
1972	10,909	7,147	3,743	15,803	10,649	5,173	17,995	12,915	5,080	0.4031
1973	12,125	8,506	3,656	17,032	11,164	5,832	19,059	13,694	5,365	0.4292
1974	13,858	9,006	4,845	17,041	11,210	5,838	20,813	15,160	5,653	0.4084
1975	14,840	9,625	5,224	17,954	11,285	6,660	22,589	16,414	6,175	0.4158
1976	16,925	10,481	6,437	18,393	11,588	6,812	23,738	17,904	5,834	0.4485
1977	17,264	10,295	6,979	18,099	11,098	6,991	22,926	17,283	5,643	0.4525
1978	19,713	12,070	7,606	18,915	12,002	6,950	23,754	18,217	5,537	0.4792
1979	20,351	11,764	8,509	18,856	12,266	6,668	23,277	17,886	5,391	0.4882
1980	21,178	12,545	8,613	18,608	11,443	7,185	22,798	17,553	5,245	0.5103
1981	21,651	11,958	9,708	18,985	11,823	7,147	22,938	17,490	5,448	0.5191
1982	21,744	12,484	9,295	18,947	11,381	7,531	22,530	17,202	5,328	0.5323
1983	21,921	12,407	9,579	18,177	10,985	7,127	21,877	16,935	4,942	0.5328
1984	22,834	12,753	10,169	18,254	11,392	6,774	21,425	16,651	4,774	0.5344
1985	24,585	14,650	9,947	19,616	12,181	7,423	20,350	15,908	4,442	0.5467
1986	n/a	n/a	n/a	n/a	n/a	n/a	20,362	15,589	4,774	0.5557
1987	n/a	n/a	n/a	n/a	n/a	n/a	20,380	15,780	4,600	0.5562
1988	n/a	n/a	n/a	n/a	n/a	n/a	20,395	15,774	4,621	n/a

1/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-88 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure, which was interpolated. NSF numbers for 1978-88 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years.

2/ Total graduate enrollment in clinical psychology was estimated by the formula $CGI=(CPI+2/TPI+2)EI$, where CGI = clinical psychology graduate enrollment in year I; CPI+2 = clinical psychology Ph.D. degrees awarded in year I+2; TPI+2 = total psychology Ph.D. degrees awarded in year I+2; EI = psychology graduate enrollment in year I. Public and private estimates were based on enrollment ratios. Nonclinical psychology graduate enrollment represents the difference between total psychology and clinical psychology graduate enrollments. See Appendix Tables C4 and C10 for supporting data.

3/ Includes sociology and anthropology for all years; includes speech pathology/audiology beginning in 1972. See Appendix Tables C5, C6, and C8 for supporting data.

4/ See Appendix Table C10 for number of Ph.D.s.

APPENDIX TABLE C3. First-Year Graduate Enrollment in the Behavioral Sciences, 1960-88 1/

	Total First-Year Graduate Enrollment 2/					First-Year Full-time Graduate Enrollment in Doctorate-Granting Institutions 3/					
Fiscal Year	All Behav. Sci.	Psych.	Sociol.	Anthro.	Spch.Path./ Audiology	All Behav. Sci.	Psych.	Sociol.	Anthro.	Sociol/ Anthro.	Spch.Path./ Audiology
1960	6,188	4,366	1,486	336	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1961	7,732	5,470	1,805	457	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1962	8,038	5,655	1,861	522	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1963	8,739	6,169	2,020	550	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1964	9,288	5,928	2,625	735	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1965	11,832	7,673	3,137	1,022	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1966	13,659	8,765	3,645	1,249	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1967	13,659	8,459	3,793	1,407	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1968	15,966	10,190	4,290	1,486	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1969	16,831	10,645	4,584	1,602	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1970	19,501	12,200	5,456	1,845	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1971	22,709	14,262	6,033	2,414	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1972	24,607	14,754	5,484	2,366	2,003	n/a	n/a	n/a	n/a	n/a	n/a
1973	26,269	15,678	5,642	2,525	2,424	n/a	n/a	n/a	n/a	n/a	n/a
1974	27,636	16,219	5,404	2,515	3,498	n/a	n/a	n/a	n/a	n/a	n/a
1975	29,376	17,270	5,257	2,554	4,295	12,028	5,872	1,930	1,368	338	2,520
1976	31,545	18,510	5,012	2,748	5,275	11,821	5,737	1,852	1,276	398	2,558
1977	29,778	17,565	4,461	2,525	5,227	11,606	5,983	1,706	1,335	259	2,323
1978	n/a	n/a	n/a	n/a	n/a	11,695	6,063	1,678	1,326	273	2,355
1979	n/a	n/a	n/a	n/a	n/a	10,390	5,569	1,371	1,141	218	2,091
1980	n/a	n/a	n/a	n/a	n/a	9,938	5,468	1,286	1,110	227	1,847
1981	n/a	n/a	n/a	n/a	n/a	10,227	5,697	1,314	966	203	2,047
1982	n/a	n/a	n/a	n/a	n/a	9,846	5,564	1,229	928	153	1,972
1983	n/a	n/a	n/a	n/a	n/a	9,650	5,474	1,130	896	200	1,950
1984	n/a	n/a	n/a	n/a	n/a	9,408	5,405	1,129	830	159	1,885
1985	n/a	n/a	n/a	n/a	n/a	9,477	5,441	1,094	869	139	1,934
1986	n/a	n/a	n/a	n/a	n/a	9,872	5,743	1,073	949	179	1,928
1987	n/a	n/a	n/a	n/a	n/a	9,555	5,560	1,070	911	182	1,832
1988	n/a	n/a	n/a	n/a	n/a	9,698	5,656	1,231	964	180	1,667

1/ Figures are higher than those presented in the 1983 Report because speech pathology/audiology is now included in the taxonomy.

2/ From the U.S. Department of Education (1959-79).

3/ From the National Science Foundation (1973-88a).

APPENDIX TABLE C4. Psychology Enrollments in Colleges and Universities, B.A. Degrees Awarded in Psychology, and Ratio of Psychology B.A.s to Total B.A.s, by Type of Institutional Control, 1960-88

Fiscal Year	Enrollments: Total Undergraduate and Graduate Enrollment			Enrollments: Estimated Undergraduate Enrollment 1/			Enrollments: Graduate Enrollment 2/			B.A. Degrees Awarded 3/			Ratio of Psych. B.A.s/ Total B.A.s 4/
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1960	92,894	n/a	n/a	83,937	n/a	n/a	8,957	4,639	4,318	8,111	n/a	n/a	n/a
1961	106,036	n/a	n/a	95,359	n/a	n/a	10,677	5,580	5,097	8,524	n/a	n/a	0.0233
1962	121,373	n/a	n/a	110,622	n/a	n/a	10,751	5,698	5,053	9,638	n/a	n/a	0.0252
1963	134,461	n/a	n/a	123,117	n/a	n/a	11,344	6,363	4,981	11,062	n/a	n/a	0.0270
1964	156,762	n/a	n/a	144,135	n/a	n/a	12,627	n/a	n/a	13,359	n/a	n/a	0.0290
1965	161,244	n/a	n/a	147,511	n/a	n/a	13,733	n/a	n/a	14,721	n/a	n/a	0.0299
1966	193,667	n/a	n/a	178,116	n/a	n/a	15,551	n/a	n/a	17,022	n/a	n/a	0.0325
1967	218,894	n/a	n/a	203,209	136,946	66,263	15,685	n/a	n/a	19,496	n/a	n/a	0.0347
1968	249,700	n/a	n/a	230,636	159,413	71,223	19,064	n/a	n/a	23,972	n/a	n/a	0.0376
1969	287,920	n/a	n/a	266,277	191,557	74,720	21,643	n/a	n/a	29,495	16,609	12,886	0.0402
1970	332,414	n/a	n/a	309,688	227,519	82,169	22,726	n/a	n/a	33,854	19,819	14,035	0.0424
1971	372,721	n/a	n/a	347,379	258,712	88,667	25,342	n/a	n/a	38,154	22,696	15,458	0.0451
1972	405,227	303,667	101,560	378,515	285,871	92,644	26,712	17,796	8,916	43,421	26,312	17,109	0.0486
1973	415,508	313,159	102,349	386,351	293,490	92,861	29,157	19,669	9,488	48,096	29,410	18,686	0.0517
1974	418,251	316,699	101,552	387,352	296,483	90,869	30,899	20,216	10,683	52,256	33,007	19,249	0.0548
1975	424,629	324,286	100,343	391,835	303,376	88,459	32,794	20,910	11,884	51,436	32,751	18,685	0.0552
1976	434,156	333,186	100,970	398,838	311,117	87,721	35,318	22,069	13,249	50,363	32,662	17,701	0.0539
1977	429,893	321,351	97,884	394,530	n/a	n/a	35,363	21,393	13,970	47,794	31,005	16,789	0.0515
1978	435,003	322,171	99,469	396,375	n/a	n/a	38,628	24,072	14,556	45,057	28,698	16,359	0.0484
1979	419,597	310,470	97,959	380,390	n/a	n/a	39,207	24,030	15,177	43,012	26,969	16,043	0.0462
1980	425,374	314,575	100,036	385,588	n/a	n/a	39,786	23,988	15,798	42,513	26,254	16,259	0.0452
1981	431,378	323,236	103,045	390,742	n/a	n/a	40,636	23,781	16,855	41,364	25,592	15,772	0.0437
1982	434,865	n/a	n/a	394,174	n/a	n/a	40,691	23,865	16,826	41,539	25,758	15,781	0.0431
1983	436,751	n/a	n/a	396,653	n/a	n/a	40,098	23,392	16,706	40,364	n/a	n/a	0.0416
1984	445,356	n/a	n/a	404,252	n/a	n/a	41,088	24,145	16,943	39,872	n/a	n/a	0.0409
1985	n/a	n/a	n/a	n/a	n/a	n/a	44,201	26,831	17,370	39,811	n/a	n/a	0.0406
1986	n/a	n/a	n/a	n/a	n/a	n/a	43,845	26,681	17,164	40,521	n/a	n/a	0.0410
1987	n/a	n/a	n/a	n/a	n/a	n/a	43,658	26,528	17,130	42,836	n/a	n/a	0.0432
1988	n/a	n/a	n/a	n/a	n/a	n/a	44,912	26,751	18,161	n/a	n/a	n/a	n/a

(See footnotes on the following page)

APPENDIX TABLE C4 Continued

1/ Estimated by the formula $U_i=(A_{i+2}/B_{i+2})C_i$, where U_i=psychology undergraduate enrollment in year i; A_{i+2}=psychology baccalaureate degrees awarded in year i+2; B_{i+2}=total baccalaureate degrees awarded in year i+2; C_i=total undergraduate degree-credit enrollment in year i (excluding first professional) for 1960-1976. Due to changes in the survey form, total enrollment in 1977-1988 is defined as undergraduate enrollment less unclassified undergradustes. NCES defines unclassified undergraduates as non-degree seeking. Public and private estimates were based on enrollment ratios. See Appendix Table C9 for supporting data.

2/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-88 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure, which was interpolated. Due to differences in taxonomy, NSF numbers for 1978-88 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 37,427 graduate students enrolled in psychology; in comparison, the Department of Education reported a somewhat lower figure of 35,363 (as shown in this table).

3/ Figures for 1960-68 were obtained from the U.S. Department of Education (1948-81), those for 1969-86 from the U.S. Department of Education (1948-88).

4/ See Appendix Table C9 for total B.A.s.

APPENDIX TABLE C5. Sociology Enrollments in Colleges and Universities, B.A. Degrees Awarded in Sociology, and Ratio of Sociology B.A.s to Total B.A.s, by Type of Institutional Control, 1960-88

	Enrollments												
	Total Undergraduate and Graduate Enrollment			Estimated Undergraduate Enrollment 1/			Graduate Enrollment 2/			B.A. Degrees Awarded 3/			Ratio of Sociol. B.A.s to Total B.A.s 4/
Fiscal Year	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1960	74,195	n/a	n/a	71,266	n/a	n/a	2,929	1,540	1,389	7,182	n/a	n/a	n/a
1961	81,326	n/a	n/a	78,049	n/a	n/a	3,277	1,863	1,414	7,519	n/a	n/a	0.0206
1962	94,982	n/a	n/a	91,494	n/a	n/a	3,488	1,975	1,513	8,183	n/a	n/a	0.0214
1963	111,778	n/a	n/a	107,854	n/a	n/a	3,924	2,328	1,596	9,054	n/a	n/a	0.0221
1964	133,335	n/a	n/a	128,732	n/a	n/a	4,603	n/a	n/a	11,049	n/a	n/a	0.0240
1965	139,652	n/a	n/a	134,307	n/a	n/a	5,345	n/a	n/a	12,896	n/a	n/a	0.0262
1966	170,114	n/a	n/a	163,924	n/a	n/a	6,190	n/a	n/a	15,203	n/a	n/a	0.0290
1967	189,642	n/a	n/a	182,954	123,296	59,658	6,688	n/a	n/a	17,751	n/a	n/a	0.0316
1968	217,927	n/a	n/a	210,157	145,258	64,899	7,770	n/a	n/a	22,062	n/a	n/a	0.0346
1969	243,609	n/a	n/a	234,927	169,004	65,923	8,682	n/a	n/a	26,555	14,604	11,951	0.0362
1970	263,958	n/a	n/a	254,093	186,675	67,418	9,865	n/a	n/a	30,848	17,820	13,028	0.0387
1971	270,294	n/a	n/a	259,971	193,614	66,357	10,323	n/a	n/a	33,662	19,992	13,670	0.0398
1972	270,184	203,360	66,824	260,012	196,372	63,640	10,172	6,988	3,184	35,626	21,783	13,843	0.0398
1973	249,429	188,734	60,695	238,987	181,545	57,442	10,442	7,189	3,253	35,994	22,780	13,214	0.0387
1974	225,615	172,021	53,594	215,123	164,657	50,466	10,492	7,364	3,128	35,896	23,387	12,509	0.0376
1975	215,344	166,070	49,274	204,870	158,619	46,251	10,474	7,451	3,023	31,817	20,790	11,027	0.0342
1976	213,928	166,275	47,653	203,512	158,751	44,761	10,416	7,524	2,892	27,970	18,506	9,464	0.0299
1977	198,399	150,147	42,886	188,725	n/a	n/a	9,674	6,870	2,804	24,989	16,569	8,420	0.0269
1978	187,759	140,598	40,919	178,895	n/a	n/a	8,864	6,222	2,642	22,991	15,324	7,667	0.0247
1979	170,417	127,751	37,701	161,905	n/a	n/a	8,512	5,998	2,514	20,545	13,531	7,014	0.0221
1980	159,352	119,968	35,489	151,193	n/a	n/a	8,159	5,774	2,385	19,164	12,494	6,670	0.0204
1981	144,197	112,673	33,253	136,196	n/a	n/a	8,001	5,574	2,427	17,582	11,371	6,211	0.0186
1982	137,922	n/a	n/a	130,106	n/a	n/a	7,816	5,461	2,355	16,324	10,574	5,750	0.0169
1983	126,437	n/a	n/a	119,191	n/a	n/a	7,246	5,168	2,078	14,105	n/a	n/a	0.0145
1984	129,211	n/a	n/a	122,262	n/a	n/a	6,949	5,027	1,922	13,145	n/a	n/a	0.0135
1985	n/a	n/a	n/a	n/a	n/a	n/a	6,862	5,090	1,772	11,968	n/a	n/a	0.0122
1986	n/a	n/a	n/a	n/a	n/a	n/a	6,593	4,835	1,758	12,271	n/a	n/a	0.0124
1987	n/a	n/a	n/a	n/a	n/a	n/a	6,537	4,884	1,653	12,239	n/a	n/a	0.0124
1988	n/a	n/a	n/a	n/a	n/a	n/a	7,020	5,271	1,749	n/a	n/a	n/a	n/a

(See footnotes on the following page)

APPENDIX TABLE C5 Continued

1/ Estimated by the formula $U_i=(A_{i+2}/B_{i+2})C_i$, where U_i = sociology undergraduate enrollment in year i, A_{i+2} = sociology baccalaureate degrees awarded in year i+2; B_{i+2} = total baccalaureate degrees awarded in year i+2; C_i = total undergraduate degree-credit enrollment in year i (excluding first professional) in 1960-1976. Due to changes in the survey form, total enrollment in 1977-1988 is defined as undergraduate enrollment less unclassified undergraduates. NCES defines unclassified undergraduates as non-degree seeking. Public and private estimates were based on enrollment ratios. See Appendix Table C9 for supporting data.

2/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-88 were obtained from the National Science Foundation (1973-88a) except for the 1977 figure, which was interpolated. Due to differences in taxonomy, NSF numbers for 1978-88 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 9,686 graduate students enrolled in sociology (with an additional 1,239 enrolled in sociology/anthropology); in comparison, the Department of Education reported a somewhat lower figure of 9,674 (as shown in this table). Graduate enrollments in the interdisciplinary field of sociology/anthropology are not included in this table, but are presented in Appendix Table C7.

3/ Figures for 1960-68 were obtained from the U.S. Department of Education (1948-81), those for 1969-86 from the U.S. Department of Education (1948-88).

4/ See Appendix Table C9 for total B.A.s.

APPENDIX TABLE C6. Anthropology Enrollments in Colleges and Universities, B.A. Degrees Awarded in Anthropology, and Ratio of Anthropology B.A.s to Total B.A.s, by Type of Institutional Control, 1960-88

Fiscal Year	Enrollments: Total Graduate and Undergraduate Enrollment			Estimated Undergraduate Enrollment 1/			Graduate Enrollment 2/			B.A. Degrees Awarded 3/			Ratio of Anthro B.A.s to Total B.A.s 4/
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1960	5,887	n/a	n/a	5,025	n/a	n/a	862	437	425	413	n/a	n/a	n/a
1961	7,437	n/a	n/a	6,431	n/a	n/a	1,006	538	468	484	n/a	n/a	0.0013
1962	9,120	n/a	n/a	7,983	n/a	n/a	1,137	620	517	577	n/a	n/a	0.0015
1963	11,399	n/a	n/a	10,061	n/a	n/a	1,338	765	573	746	n/a	n/a	0.0018
1964	14,278	n/a	n/a	12,726	n/a	n/a	1,552	n/a	n/a	964	n/a	n/a	0.0021
1965	15,679	n/a	n/a	13,808	n/a	n/a	1,871	n/a	n/a	1,203	n/a	n/a	0.0024
1966	19,123	n/a	n/a	16,800	n/a	n/a	2,323	n/a	n/a	1,503	n/a	n/a	0.0029
1967	23,284	n/a	n/a	20,600	13,883	6,717	2,684	n/a	n/a	1,825	n/a	n/a	0.0032
1968	28,331	n/a	n/a	25,282	17,475	7,807	3,049	n/a	n/a	2,261	n/a	n/a	0.0036
1969	34,288	n/a	n/a	30,610	22,021	8,589	3,678	n/a	n/a	2,990	2,321	669	0.0041
1970	40,691	n/a	n/a	36,774	27,017	9,757	3,917	n/a	n/a	3,711	2,894	817	0.0046
1971	45,318	n/a	n/a	40,627	30,257	10,370	4,691	n/a	n/a	4,386	3,417	969	0.0052
1972	48,476	36,443	12,033	43,475	32,834	10,641	5,001	3,609	1,392	5,156	4,034	1,122	0.0058
1973	47,477	36,001	11,476	42,243	32,090	10,153	5,234	3,911	1,323	5,625	4,397	1,228	0.0060
1974	45,472	34,589	10,883	39,902	30,541	9,361	5,570	4,048	1,522	6,002	4,756	1,246	0.0063
1975	45,481	34,940	10,541	39,713	30,748	8,965	5,768	4,192	1,576	5,624	4,430	1,194	0.0060
1976	44,124	34,183	9,941	38,062	29,691	8,371	6,062	4,492	1,570	5,188	4,081	1,107	0.0056
1977	50,350	32,328	9,297	44,406	n/a	n/a	5,944	4,447	1,497	4,844	3,816	1,028	0.0052
1978	47,067	30,275	8,940	40,339	n/a	n/a	6,728	4,990	1,738	4,300	3,353	947	0.0046
1979	43,966	28,022	8,344	37,430	n/a	n/a	6,536	4,880	1,656	3,998	3,018	980	0.0043
1980	40,339	26,294	7,814	33,996	n/a	n/a	6,343	4,769	1,574	3,606	2,773	833	0.0038
1981	39,197	25,084	7,553	32,875	n/a	n/a	6,322	4,650	1,672	3,342	2,465	877	0.0035
1982	36,958	n/a	n/a	30,840	n/a	n/a	6,118	4,442	1,676	3,077	2,281	796	0.0032
1983	34,280	n/a	n/a	28,332	n/a	n/a	5,948	4,293	1,655	2,806	n/a	n/a	0.0029
1984	33,251	n/a	n/a	27,607	n/a	n/a	5,644	4,061	1,583	2,693	n/a	n/a	0.0028
1985	n/a	n/a	n/a	n/a	n/a	n/a	5,605	4,087	1,518	2,625	n/a	n/a	0.0027
1986	n/a	n/a	n/a	n/a	n/a	n/a	5,616	4,076	1,540	2,594	n/a	n/a	0.0026
1987	n/a	n/a	n/a	n/a	n/a	n/a	5,836	4,182	1,654	2,730	n/a	n/a	0.0028
1988	n/a	n/a	n/a	n/a	n/a	n/a	5,887	4,245	1,642	n/a	n/a	n/a	n/a

(See footnotes on the following page)

APPENDIX TABLE C6 Continued

1/ Estimated by the formula $U_i=(A_{i+2}/B_{i+2})C_i$, where U_i = anthropology undergraduate enrollment in year i; A_{i+2} = anthropology baccalaureate degrees awarded in year i+2; B_{i+2} = total baccalaureate degrees awarded in year i+2; C_i = total undergraduate degree-credit enrollment in year i (excluding first professional) in 1960-1976. Due to changes in the survey form, total enrollment in 1977-1988 is defined as undergraduate enrollment less unclassified undergraduates. NCES defines unclassified undergraduates as non-degree seeking. Public and private estimates were based on enrollment ratios. See Appendix Table C9 for supporting data.

2/ Figures for 1960-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-88 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure, which was interpolated. Due to differences in taxonomy, NSF numbers for 1978-88 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 6,622 graduate students enrolled in anthropology (with an additional 1,239 enrolled in sociology/anthropology); in comparison, the Department of Education reported a somewhat lower figure of 5,944 (as shown in this table). Graduate enrollments in the interdisciplinary field of sociology/anthropology are not included in this table, but are presented in Appendix Table C7.

3/ Figures for 1960-68 were obtained from the U.S. Department of Education (1948-81), those for 1969-86 from the U.S. Department of Education (1948-88).

4/ See Appendix Table C9 for total B.A.s.

APPENDIX TABLE C7. Graduate Enrollment in Sociology/Anthropology (Interdisciplinary), by Type of Institutional Control, 1978-88 1/

Fiscal Year	Total	Public	Private
1978	1,398	864	534
1979	1,317	794	523
1980	1,236	723	513
1981	1,206	722	484
1982	1,110	634	476
1983	1,133	638	495
1984	1,200	610	590
1985	1,090	561	529
1986	1,064	543	521
1987	1,062	571	491
1988	1,000	572	428

1/ From the National Science Foundation (1973-88a). The figures for 1979 were interpolated. The NSF taxonomy includes the interdisciplinary field of sociology/anthropology as well as the separate fields of sociology and anthropology. Sociology/anthropology is included in the total graduate enrollment data presented in Appendix Table C1. It is not included in Appendix Tables C5 and C6 which present graduate enrollments in sociology and anthropology.

APPENDIX TABLE C8. Speech Pathology/Audiology Enrollments in Colleges and Universities, B.A. Degrees Awarded in Speech Pathology/Audiology, and Ratio of Speech Pathology/Audiology B.A.s to Total B.A.s, by Type of Institutional Control, 1971-88

	Enrollments												
	Total Undergraduate and Graduate Enrollment			Estimated Undergraduate Enrollment 1/			Graduate Enrollment 2/			B.A. Degrees awarded 3/			Ratio of Speech Path./ Audiol. B.A.s to Total B.A.s 4/
Fiscal Year	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total
1971	n/a	n/a	n/a	18,591	13,846	4,745	n/a	n/a	n/a	1,427	1,070	357	0.0017
1972	26,566	20,251	6,315	23,744	17,933	5,811	2,822	2,318	504	1,863	1,489	374	0.0021
1973	31,415	23,888	7,527	28,032	21,294	6,738	3,383	2,594	789	2,574	2,117	457	0.0028
1974	34,939	26,854	8,085	30,188	23,106	7,082	4,751	3,748	1,003	3,278	2,713	565	0.0034
1975	38,025	29,298	8,727	31,678	24,527	7,151	6,347	4,771	1,576	3,732	3,172	560	0.0040
1976	38,692	30,407	8,285	31,432	24,519	6,913	7,260	5,888	1,372	3,925	3,360	565	0.0042
1977	43,174	30,751	8,276	35,866	n/a	n/a	7,308	5,966	1,342	3,864	3,295	569	0.0042
1978	41,486	32,068	8,412	33,324	n/a	n/a	8,162	7,005	1,157	3,551	2,842	709	0.0038
1979	41,306	30,851	8,230	33,077	n/a	n/a	8,229	7,008	1,221	3,554	2,967	587	0.0038
1980	42,292	31,104	8,389	33,996	n/a	n/a	8,296	7,010	1,286	3,576	2,954	622	0.0038
1981	42,429	32,627	8,774	33,814	n/a	n/a	8,615	7,266	1,349	3,445	2,906	539	0.0036
1982	43,291	n/a	n/a	34,695	n/a	n/a	8,596	7,299	1,297	3,446	2,963	483	0.0036
1983	38,969	n/a	n/a	30,286	n/a	n/a	8,683	7,474	1,209	3,041	n/a	n/a	0.0031
1984	38,411	n/a	n/a	29,579	n/a	n/a	8,832	7,563	1,269	2,901	n/a	n/a	0.0030
1985	n/a	n/a	n/a	n/a	n/a	n/a	7,883	6,731	1,152	2,526	n/a	n/a	0.0026
											n/a	n/a	
1986	n/a	n/a	n/a	n/a	n/a	n/a	8,153	6,678	1,476	2,464	n/a	n/a	0.0025
1987	n/a	n/a	n/a	n/a	n/a	n/a	8,007	6,714	1,293	2,563	n/a	n/a	0.0026
1988	n/a	n/a	n/a	n/a	n/a	n/a	7,488	6,258	1,230	n/a	n/a	n/a	n/a

1/ Estimated by the formula Ui=(Ai+2/Bi+2)Ci, where Ui = speech pathology/audiology undergraduate enrollment in year i; Ai+2 = speech pathology/audiology baccalaureate degrees awarded in year i+2; Bi+2 = total baccalaureate degrees awarded in year i+2; Ci = total undergraduate degree-credit enrollment in year i (excluding first professional). Public and private estimates were based on enrollment ratios. See Appendix Table C9 for supporting data.

2/ Figures for 1971-77 were obtained from the U.S. Department of Education (1959-79). Figures for 1978-88 were obtained from the National Science Foundation (1973-88a) except for the 1979 figure, which was interpolated. Due to differences in taxonomy, NSF numbers for 1978-88 may be slightly higher than numbers that would have been obtained from the Department of Education had data been collected for those years. For the year 1977, NSF reported 7,725 graduate students enrolled in speech pathology/audiology; in comparison, the Department of Education reported a somewhat lower figure of 7,308 (as shown in this table).

3/ Figures for 1971-86 were obtained from the U.S. Department of Education (1948-88).

4/ See Appendix Table C9 for total B.A.s.

APPENDIX TABLE C9. Total Undergraduate Degree-Credit Enrollment, Total B.A. Degrees, and B.A. Degrees Awarded in the Behavioral Sciences, by Type of Institutional Control, 1960-87

Fiscal Year	Total Undergraduate Degree-Credit Enrollment (thousands) 1/						Total B.A. Degrees Awarded (excluding first professional) 4/			B.A. Degrees Awarded in Behavioral Sciences 4/		
	Including First Professional 2/			Excluding First Professional 3/								
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1960	3,402	n/a	n/a	3,334	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1961	3,610	n/a	n/a	3,538	n/a	n/a	365,337	n/a	n/a	16,527	n/a	n/a
1962	3,891	n/a	n/a	3,813	n/a	n/a	382,822	n/a	n/a	18,398	n/a	n/a
1963	4,207	n/a	n/a	4,123	n/a	n/a	410,421	n/a	n/a	20,862	n/a	n/a
1964	4,529	n/a	n/a	4,438	n/a	n/a	460,467	n/a	n/a	25,372	n/a	n/a
1965	4,343	2,802	1,541	4,255	n/a	n/a	492,984	n/a	n/a	28,820	n/a	n/a
1966	4,829	3,184	1,645	4,732	n/a	n/a	524,117	n/a	n/a	33,728	n/a	n/a
1967	5,160	3,451	1,709	5,057	3,408	1,649	562,369	n/a	n/a	39,072	n/a	n/a
1968	5,557	3,810	1,747	5,437	3,758	1,679	636,863	n/a	n/a	48,295	n/a	n/a
1969	6,043	4,308	1,735	5,905	4,248	1,657	734,002	466,133	267,869	59,040	33,534	25,506
1970	6,529	4,749	1,780	6,377	4,685	1,692	798,070	523,442	274,628	68,413	40,533	27,880
1971	6,889	5,076	1,813	6,719	5,004	1,715	846,110	562,345	283,765	77,629	47,175	30,454
1972	7,104	5,302	1,802	6,913	5,221	1,692	894,110	604,471	289,639	86,066	53,618	32,448
1973	7,200	5,401	1,799	6,998	5,316	1,682	930,272	636,378	293,894	92,289	58,704	33,585
1974	7,396	5,589	1,807	7,187	5,501	1,686	954,376	657,455	296,921	97,432	63,863	33,569
1975	7,833	5,986	1,847	7,610	5,892	1,718	931,663	640,524	291,139	92,609	61,143	31,466
1976	8,468	6,520	1,948	8,234	6,423	1,811	934,443	640,799	293,644	87,446	58,609	28,837
1977	8,786	n/a	n/a	8,540	n/a	n/a	928,228	635,909	292,319	81,491	54,685	26,806
1978	9,022	n/a	n/a	8,769	n/a	n/a	930,201	633,183	297,018	75,899	50,217	25,682
1979	8,963	n/a	n/a	8,705	n/a	n/a	931,340	627,084	304,256	71,109	46,485	24,624
1980	9,211	n/a	n/a	8,946	n/a	n/a	940,251	629,338	310,913	68,859	44,475	24,384
1981	9,673	n/a	n/a	9,393	n/a	n/a	946,877	632,168	314,709	65,733	42,334	23,399
1982	9,914	n/a	n/a	9,638	n/a	n/a	964,043	641,751	322,292	64,386	41,576	22,810
1983	10,050	n/a	n/a	9,770	n/a	n/a	969,510	n/a	n/a	60,316	n/a	n/a
1984	10,140	n/a	n/a	9,860	n/a	n/a	974,309	n/a	n/a	58,611	n/a	n/a
1985	9,928	n/a	n/a	9,647	n/a	n/a	979,477	n/a	n/a	56,930	n/a	n/a
1986	9,838	n/a	n/a	9,561	n/a	n/a	987,823	n/a	n/a	57,850	n/a	n/a
1987	10,168	n/a	n/a	9,894	n/a	n/a	991,264	659,260	332,004	60,368	n/a	n/a

(See footnotes on the following page)

APPENDIX TABLE C9 Continued

1/ The Department of Education last collected data on "degree-credit" enrollment in FY 1976; beginning in FY 1977, the survey collected data on "unclassified undergraduates", defined as non-degree-seeking students. Beginning in FY 1977, undergraduate degree-credit enrollment is defined as total undergraduate enrollment excluding unclassified undergraduates.

2/ Figures for 1960-64 were obtained from the U.S. Department of Education (1961-84), those for 1965-75 from the U.S. Department of Education, (1973-82), and the one for 1976 from the U.S. Department of Education (1974-87). Figures for 1977-87 are from the U.S. Department of Education (1961-88).

3/ Figures for 1960-66 were estimated at 98% of total undergraduate degree-credit enrollment (including first professional). Those for 1967-76 were obtained by subtracting first professional enrollment from total degree-credit undergraduate enrollment (including first professional). First professional enrollment data for 1967-76 were obtained from the U.S. Department of Education (1959-79), data for 1977-87 from the U.S. Department of Education (1961-88).

4/ Figures for 1961-68 were obtained from the U.S. Department of Education (1948-81), those for 1969-82 from the U.S. Department of Education (1948-88), those for 1983-86 from the U.S. Department of Education (1974-87). Behavioral science B.A.s include psychology, sociology, anthropology, and speech pathology/audiology. Figures are higher than those presented in the 1983 Report because speech pathology/audiology is now included in the taxonomy.

APPENDIX TABLE C10-1. Behavioral Science Ph.D. Degrees Awarded in Colleges and Universities, by Type of Institutional Control, 1961-87 1/

Fiscal Year	Total Behavorial Sciences			Total Psychology (Clinical and Nonclinical)			Clinical Psychology 2/			Nonclinical Psychology		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1961	1,042	n/a	n/a	820	n/a	n/a	381	n/a	n/a	439	n/a	n/a
1962	1,121	n/a	n/a	856	n/a	n/a	362	n/a	n/a	494	n/a	n/a
1963	1,184	n/a	n/a	890	n/a	n/a	367	n/a	n/a	523	n/a	n/a
1964	1,297	n/a	n/a	1,013	n/a	n/a	469	n/a	n/a	544	n/a	n/a
1965	1,275	n/a	n/a	954	n/a	n/a	398	n/a	n/a	556	n/a	n/a
1966	1,496	n/a	n/a	1,139	n/a	n/a	439	n/a	n/a	700	n/a	n/a
1967	1,773	n/a	n/a	1,295	n/a	n/a	529	n/a	n/a	766	n/a	n/a
1968	1,970	n/a	n/a	1,464	n/a	n/a	613	n/a	n/a	851	n/a	n/a
1969	2,408	n/a	n/a	1,756	n/a	n/a	666	n/a	n/a	1,090	n/a	n/a
1970	2,726	n/a	n/a	1,888	n/a	n/a	707	n/a	n/a	1,181	n/a	n/a
1971	3,148	n/a	n/a	2,130	n/a	n/a	839	n/a	n/a	1,291	n/a	n/a
1972	3,310	2,121	1,189	2,280	1,490	790	919	633	286	1,361	857	504
1973	3,542	2,245	1,297	2,458	1,541	917	1,055	673	382	1,403	868	535
1974	3,750	2,358	1,392	2,598	1,626	972	1,061	653	408	1,537	973	564
1975	3,938	2,552	1,386	2,751	1,783	968	1,144	771	373	1,607	1,012	595
1976	4,190	2,673	1,517	2,883	1,807	1,076	1,293	805	488	1,590	1,002	588
1977	4,246	2,685	1,561	2,990	1,864	1,126	1,353	858	495	1,637	1,006	631
1978	4,207	2,632	1,575	3,055	1,853	1,202	1,464	880	584	1,591	973	618
1979	4,245	2,698	1,547	3,091	1,918	1,173	1,509	923	586	1,582	995	587
1980	4,192	2,517	1,675	3,098	1,787	1,311	1,581	896	685	1,517	891	626
1981	4,472	2,727	1,745	3,358	1,965	1,393	1,743	962	781	1,615	1,003	612
1982	4,188	2,541	1,647	3,158	1,830	1,328	1,681	957	724	1,477	873	604
1983	4,318	2,626	1,692	3,307	1,951	1,356	1,762	981	781	1,545	970	575
1984	4,184	2,615	1,569	3,230	1,990	1,240	1,726	1,041	685	1,504	949	555
1985	3,986	2,542	1,444	3,073	1,908	1,165	1,680	1,012	668	1,393	896	497
1986	4,032	2,560	1,472	3,077	1,899	1,178	1,710	1,003	707	1,367	896	471
1987	3,960	2,488	1,472	3,078	1,901	1,177	1,712	1,038	674	1,366	863	503

1/ From the National Research Council's Doctorate Records File (1958-88). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Includes clinical and school psychology, counseling, and guidance.

(Data for additional fields are on the following table)

APPENDIX TABLE C10-2. Behavioral Science Ph.D. Degrees Awarded in Colleges and Universities, by Type of Institutional Control, 1961-87 1/

Fiscal Year	Total Other Behavioral Sci. (Socio.,Anthro.,Spch./Audio.)			Sociology			Anthropology			Speech Pathology/Audiology		
	Total	Public	Private	Total	Public	Private	Total	Public	Private	Total	Public	Private
1961	222	n/a	n/a	167	n/a	n/a	55	n/a	n/a	n/a	n/a	n/a
1962	265	n/a	n/a	184	n/a	n/a	81	n/a	n/a	n/a	n/a	n/a
1963	293	n/a	n/a	211	n/a	n/a	82	n/a	n/a	n/a	n/a	n/a
1964	284	n/a	n/a	201	n/a	n/a	83	n/a	n/a	n/a	n/a	n/a
1965	321	n/a	n/a	239	n/a	n/a	82	n/a	n/a	n/a	n/a	n/a
1966	357	n/a	n/a	260	n/a	n/a	97	n/a	n/a	n/a	n/a	n/a
1967	478	n/a	n/a	331	n/a	n/a	147	n/a	n/a	n/a	n/a	n/a
1968	506	n/a	n/a	369	n/a	n/a	137	n/a	n/a	n/a	n/a	n/a
1969	652	n/a	n/a	408	n/a	n/a	180	n/a	n/a	64	n/a	n/a
1970	838	n/a	n/a	505	n/a	n/a	217	n/a	n/a	116	n/a	n/a
1971	1,018	n/a	n/a	586	n/a	n/a	239	n/a	n/a	193	n/a	n/a
1972	1,030	631	399	639	374	265	260	155	105	131	102	29
1973	1,084	704	380	599	369	230	326	211	115	159	124	35
1974	1,152	732	420	645	390	255	379	238	141	128	104	24
1975	1,187	769	418	680	418	262	386	260	126	121	91	30
1976	1,307	866	441	734	459	275	428	283	145	145	124	21
1977	1,256	821	435	725	452	273	385	254	131	146	115	31
1978	1,152	779	373	610	399	211	399	270	129	143	110	33
1979	1,154	780	374	632	407	225	383	258	125	139	115	24
1980	1,094	730	364	601	382	219	370	255	115	123	93	30
1981	1,114	762	352	605	407	198	369	238	131	140	117	23
1982	1,030	711	319	568	372	196	333	230	103	129	109	20
1983	1,011	675	336	525	338	187	373	246	127	113	91	22
1984	954	625	329	515	320	195	335	225	110	104	80	24
1985	913	634	279	461	305	156	353	248	105	99	81	18
1986	955	661	294	492	318	174	381	276	105	82	67	15
1987	882	587	295	423	271	152	352	236	116	107	80	27

1/ From the National Research Council (1958-88). Foreign nationals who received doctorates from U.S. institutions are included.

APPENDIX TABLE C11-1. Behavioral Science Postdoctoral Appointments, 1973-87 1/

Fiscal Year	All Behavioral Fields					Clinical Psychology				
		Academic 2/					Academic 2/			
	Total	Total	Public	Private	Nonacademic	Total	Total	Public	Private	Nonacademic
1973	482	320	195	125	162	125	46	28	18	79
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	705	556	355	201	149	156	79	57	22	77
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	997	736	416	320	261	357	186	96	90	171
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	1,111	795	380	415	316	302	182	59	123	120
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	972	705	395	310	267	262	160	99	61	102
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	1,039	652	493	159	387	466	179	142	37	287
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	1,622	n/a	n/a	n/a	n/a	774	n/a	n/a	n/a	n/a
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	1,279	n/a	n/a	n/a	n/a	421	n/a	n/a	n/a	n/a

1/ Clinical psychology includes clinical and school psychology, counseling, and guidance. All other psychology fields are considered nonclinical. Other behavioral sciences include anthropology, sociology, and speech pathology/audiology. Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Public and private figures were adjusted by the committee to include a small number of individuals for whom type of institutional control could not be determined.

(Data for additional fields are on the following table)

APPENDIX TABLE C11-2. Behavioral Science Postdoctoral Appointments, 1973-87 1/

Fiscal Year	Nonclinical Psychology					Other Behavioral Sciences				
		Academic 2/					Academic 2/			
	Total	Total	Public	Private	Nonacademic	Total	Total	Public	Private	Nonacademic
1973	259	197	127	70	62	98	77	40	37	21
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	398	368	258	110	30	151	109	40	69	42
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	394	344	218	126	50	246	206	102	104	40
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	527	359	173	186	168	282	254	148	106	28
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	511	379	174	205	132	199	166	122	44	33
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	302	249	173	76	53	271	224	178	46	47
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	593	n/a	n/a	n/a	n/a	256	n/a	n/a	n/a	n/a
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	666	n/a	n/a	n/a	n/a	192	n/a	n/a	n/a	n/a

1/ Clinical psychology includes clinical and school psychology, counseling, and guidance. All other psychology fields are considered nonclinical. Other behavioral sciences include anthropology, sociology, and speech pathology/audiology. Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Public and private figures were adjusted by the committee to include a small number of individuals for whom type of institutional control could not be determined.

APPENDIX TABLE C12. Ph.D.s Employed in All Behavioral Science Fields, 1973-87 1/

Fiscal Year	Total Labor Force	Academia (excl. postd) Total	Postdoc. Appts.	Business	Gov't. 3/	Hospitals/ Clinics	Non-Profit	Self-Employed	Other	Unemployed and Seeking
1973	31,699	19,928	482	1,142	2,845	2,696	1,246	1,895	1,075	388
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	38,737	23,624	705	1,404	2,632	4,936	1,161	2,748	1,138	389
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	44,283	25,582	997	1,793	2,931	5,505	1,487	3,725	1,419	754
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	49,322	26,896	1,111	1,901	3,288	6,157	2,164	5,209	1,847	749
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	53,815	28,235	972	2,764	3,351	6,481	2,120	7,352	1,808	732
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	58,811	29,776	1,039	3,390	3,569	6,884	1,865	9,707	1,978	913
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	64,253	31,719	1,622	3,125	3,281	7,124	2,166	12,137	2,269	810
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	67,706	31,809	1,279	2,384	3,960	7,913	2,651	14,550	2,267	893

1/ Behavioral sciences include anthropology, sociology, psychology, and speech pathology/audiology. Based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

APPENDIX TABLE C13. Ph.D.s Employed in Clinical Psychology, 1973-87 1/

Fiscal Year	Total Labor Force	Total Academia (excluding postdocs.)	Postdoc. Appts.	Business	Gov't. 2/	Hospitals/ Clinics	Non-Profit	Self-Employed	Other	Unemployed and Seeking
1973	11,574	4,341	125	101	1,641	2,417	497	1,520	821	111
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	14,846	5,140	156	165	1,252	4,425	363	2,292	995	58
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	17,578	5,438	357	409	1,216	5,102	662	3,201	1,111	82
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	21,268	5,790	302	417	1,671	5,702	1,093	4,785	1,372	136
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	23,775	6,172	262	880	1,653	5,937	1,032	6,264	1,367	208
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	26,285	6,370	466	1,004	1,854	5,737	1,165	7,999	1,529	161
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	30,926	7,495	774	1,007	1,873	6,166	1,194	10,401	1,898	117
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	33,599	7,997	421	410	1,858	6,950	1,447	12,440	1,865	209

1/ Clinical psychology includes clinical and school psychology, counseling, and guidance. Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Includes FFRDC laboratories.

APPENDIX TABLE C14. Ph.D.s Employed in Nonclinical Psychology, 1973-87 1/

Fiscal Year	Total Labor Force	Total Academia (excluding postdocs.)	Postdoc. Appts.	Business	Gov't. 2/	Hospitals/ Clinics	Non-Profit	Self-Employed	Other	Unemployed and Seeking
1973	13,340	9,482	289	999	1,083	269	562	323	212	181
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	15,387	10,883	398	1,218	1,170	470	560	401	129	178
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	16,102	10,908	394	1,344	1,404	447	519	443	255	391
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	16,686	11,536	527	1,355	1,164	401	574	321	434	374
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	18,791	12,586	511	1,827	1,235	507	631	905	295	294
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	19,431	12,404	302	2,258	1,320	629	451	1,328	333	406
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	20,070	13,221	593	1,924	1,189	585	667	1,270	245	376
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	20,755	13,058	686	1,745	1,724	555	858	1,655	249	246

1/ Nonclinical psychology includes all psychology fields except clinical and school psychology, counseling, and guidance. Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-88). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Includes FFRDC laboratories.

APPENDIX TABLE C15. Ph.D.s Employed in Other Behavioral Sciences, 1973-87 1/

Fiscal Year	Total Labor Force	Total Academia (excluding postdocs.)	Postdoc. Appts.	Business	Gov't. 2/	Hospitals/ Clinics	Non-Profit	Self-Employed	Other	Unemployed and Seeking
1973	6,785	6,135	98	42	121	12	187	52	42	96
1974	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1975	8,504	7,621	151	21	210	41	238	55	14	153
1976	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1977	10,603	9,239	246	40	311	46	306	81	53	281
1978	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1979	11,366	9,568	282	129	453	54	497	103	41	239
1980	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1981	11,249	9,477	199	57	463	37	457	183	146	230
1982	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1983	13,095	11,002	271	128	385	218	249	380	116	346
1984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1985	13,264	11,009	256	193	218	373	304	486	126	318
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	13,365	10,767	192	229	379	408	346	455	152	438

1/ Other behavioral sciences include sociology, anthropology, and speech pathology/audiology. Figures are based on the most recent data available from the National Research Council's Survey of Doctorate Recipients (1973-86). Foreign nationals who received doctorates from U.S. institutions are included.

2/ Includes FFRDC laboratories.

APPENDIX TABLE C16. Behavioral Sciences Faculty/Student Ratios, 1964-87 1/

Fiscal Year	All Behavioral Sciences			Psychology (Clinical and Nonclinical)			Other Behavioral Sciences (Sociology, Anthropology, Speech Pathology/Audio.)		
	Faculty (F)	4-Yr. Weighted Avg. Enrollment (WS)	Ph.D. Faculty/ Student Ratio (F/WS)	Faculty (F)	4-Yr. Weighted Avg. Enrollment (WS)	Ph.D. Faculty/ Student Ratio (F/WS)	Faculty (F)	4-Yr. Weighted Avg. Enrollment (WS)	Ph.D. Faculty/ Student Ratio (F/WS)
1964	8,143	244,233	0.0333	n/a	n/a	n/a	n/a	n/a	n/a
1965	n/a	277,679	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1966	9,783	313,740	0.0312	n/a	n/a	n/a	n/a	n/a	n/a
1967	n/a	355,859	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1968	12,915	406,997	0.0317	n/a	n/a	n/a	n/a	n/a	n/a
1969	n/a	467,380	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1970	16,175	532,072	0.0304	n/a	n/a	n/a	n/a	n/a	n/a
1971	n/a	601,440	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1972	n/a	667,374	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1973	19,928	715,941	0.0278	13,793	383,970	0.0359	6,135	325,774	0.0188
1974	n/a	736,628	n/a	n/a	405,407	n/a	n/a	328,122	n/a
1975	23,624	735,024	0.0321	16,003	416,229	0.0384	7,621	318,795	0.0239
1976	n/a	728,374	n/a	n/a	422,571	n/a	n/a	305,803	n/a
1977	25,582	725,809	0.0352	16,343	427,619	0.0382	9,239	298,190	0.0310
1978	n/a	723,604	n/a	n/a	431,288	n/a	n/a	292,083	n/a
1979	26,896	712,760	0.0377	17,328	430,591	0.0402	9,568	281,464	0.0340
1980	n/a	694,840	n/a	n/a	427,411	n/a	n/a	266,318	n/a
1981	28,235	676,919	0.0417	18,758	426,054	0.0440	9,477	249,580	0.0380
1982	n/a	664,125	n/a	n/a	427,994	n/a	n/a	234,912	n/a
1983	29,776	655,212	0.0454	18,774	432,435	0.0434	11,002	221,610	0.0496
1984	n/a	648,209	n/a	n/a	436,661	n/a	n/a	210,402	n/a
1985	31,725	n/a	n/a	20,716	n/a	n/a	11,009	n/a	n/a
1986	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1987	31,822	n/a	n/a	21,055	n/a	n/a	10,767	n/a	n/a

1/ Faculty is defined as all Ph.D.s academically employed in the behavioral science area (excluding postdoctoral appointments). Students are defined as a 4-year weighted average of enrollments, i.e., $(WS)t = 1/6(St + 2St\text{-}1 + 2St\text{-}2 + St\text{-}3)$, where S = total graduate and undergraduate enrollment in the behavioral science area. See Appendix Tables C1, C4-6, and C8 for supporting data.

APPENDIX TABLE C17. Ph.D.s Academically Employed in the Behavioral Sciences, by Employment Status and Type of Institution, 1973-87 1/

Fiscal Year	Employment Status	All Behavioral Fields			Clinical Psychology			Nonclinical Psychology			Other Behavioral Sciences		
		Type of Institution			Type of Institution			Type of Institution			Type of Institution		
		Total	4-Year	2-Year	Total	4-Year	2-Year	Total	4-Year	2-Year	Total	4-Year	2-Year
1973	Total	19,928	19,361	567	4,341	4,155	186	9,452	9,144	308	6,135	6,062	73
	Full-Time	19,220	18,710	510	4,159	3,977	182	9,164	8,909	255	5,897	5,824	73
	Part-Time	708	651	57	182	178	4	288	235	53	238	238	0
1975	Total	23,624	22,923	701	5,140	4,946	194	10,863	10,528	335	7,621	7,449	172
	Full-Time	22,887	22,255	632	4,965	4,778	187	10,511	10,210	301	7,413	7,269	144
	Part-Time	737	668	69	175	168	7	352	318	34	208	180	28
1977	Total	25,582	24,706	876	5,438	5,272	166	10,905	10,438	467	9,239	8,996	243
	Full-Time	24,736	23,970	766	5,233	5,074	159	10,505	10,124	381	8,998	8,772	226
	Part-Time	846	736	110	205	198	7	400	314	86	241	224	17
1979	Total	26,896	26,003	893	5,790	5,621	169	11,538	11,090	448	9,568	9,292	276
	Full-Time	25,566	24,836	730	5,463	5,318	145	10,966	10,619	347	9,137	8,898	239
	Part-Time	1,330	1,167	163	327	303	24	572	471	101	431	394	37
1981	Total	28,235	27,062	1,173	6,172	5,806	366	12,586	12,062	524	9,477	9,194	283
	Full-Time	27,098	26,065	1,033	5,802	5,464	338	12,181	11,744	437	9,111	8,854	257
	Part-Time	1,137	997	140	370	342	28	405	318	87	366	340	26
1983	Total	29,776	28,487	1,289	6,370	6,151	219	12,404	11,772	632	11,002	10,564	438
	Full-Time	28,091	26,964	1,127	5,903	5,684	219	11,871	11,315	556	10,317	9,964	353
	Part-Time	1,685	1,523	162	467	467	0	533	457	76	685	600	85
1985	Total	31,719	30,296	1,423	7,499	7,142	357	13,222	12,545	677	11,009	10,619	390
	Full-Time	30,004	28,751	1,253	7,082	6,739	343	12,617	12,040	577	10,315	9,980	335
	Part-Time	1,715	1,545	170	417	403	14	605	505	100	694	639	55
1987	Total	31,809	30,411	1,398	8,000	7,654	346	13,060	12,401	659	10,767	10,371	396
	Full-Time	29,975	28,738	1,237	7,550	7,253	297	12,431	11,822	609	10,010	9,677	333
	Part-Time	1,834	1,673	161	450	401	49	629	579	50	757	694	63
Average Annual Growth Rate 1973-87	Total	3.4%	3.3%	6.7%	4.5%	4.5%	4.5%	2.3%	2.2%	5.6%	4.1%	3.9%	12.8%
	Full-Time	3.2%	3.1%	6.5%	4.4%	4.4%	3.6%	2.2%	2.0%	6.4%	3.9%	3.7%	11.5%
	Part-Time	7.0%	7.0%	7.7%	6.7%	6.0%	19.6%	5.7%	6.7%	-0.4%	8.6%	7.9%	

1/ Clinical psychology includes clinical and school psychology, counseling, and guidance. All other psychology fields are considered nonclinical. Other behavioral sciences include anthropology, sociology, and speech pathology/audiology. Figures are based on the most recent data available from the National Research Council (1973-88). Foreign nationals who received doctorates from U.S. institutions are included. Individuals on postdoctoral appointments are excluded.

APPENDIX TABLE C18. Behavioral Science R and D Expenditures, by Type of Institutional Control, 1964-87 ($ millions)

Fiscal Year	Current Dollars 1/			1972 Dollars			Implicit GNP Price Deflator 2/ (1972 = 100.0)
	Total	Public	Private	Total	Public	Private	
1964	46.6	n/a	n/a	64.1	n/a	n/a	72.70
1965	n/a	n/a	n/a	n/a	n/a	n/a	74.30
1966	60.1	n/a	n/a	78.3	n/a	n/a	76.80
1967	n/a	n/a	n/a	n/a	n/a	n/a	79.00
1968	97.9	n/a	n/a	118.5	n/a	n/a	82.60
1969	n/a	n/a	n/a	n/a	n/a	n/a	86.70
1970	103.6	n/a	n/a	113.3	n/a	n/a	91.40
1971	n/a	n/a	n/a	n/a	n/a	n/a	96.00
1972	127.6	84.3	43.4	127.6	84.3	43.4	100.00
1973	135.3	92.6	42.7	127.9	87.5	40.4	105.80
1974	137.7	95.0	42.7	118.7	81.9	36.8	116.00
1975	149.1	103.4	45.7	117.2	81.3	35.9	127.20
1976	144.1	99.6	44.5	107.6	74.4	33.2	133.90
1977	147.1	99.2	47.8	103.8	70.0	33.7	141.70
1978	156.6	107.3	49.3	103.0	70.6	32.4	152.05
1979	175.2	120.8	54.4	105.9	73.0	32.9	165.46
1980	199.1	137.9	61.1	111.6	77.3	34.2	178.42
1981	223.2	155.4	67.8	114.4	79.6	34.7	195.14
1982	212.1	138.3	73.8	102.5	66.9	35.7	206.88
1983	215.3	144.7	70.6	99.8	67.1	32.7	215.63
1984	218.7	141.2	77.5	97.9	63.2	34.7	223.43
1985	235.3	154.4	80.9	101.9	66.9	35.1	230.80
1986	257.4	167.2	90.2	108.6	70.5	38.1	237.04
1987	275.7	174.8	100.9	112.6	71.4	41.2	244.86

1/ Figures for even years from 1964-70 and for all years from 1972-87 were obtained from the National Science Foundation (1975-88). The 1978 figures are NSF estimates. Items may not sum to totals due to rounding.

2/ From the U.S. Bureau of the Census (1988a,b).

APPENDIX TABLE C19. Average Behavioral Science R and D Expenditures per School in Colleges and Universities, by Type of Institutional Control, 1972-87 (1972 $, thousands)

Fiscal Year	Average R and D Expenditures			Number of Schools Reporting 2/		
	Total	Public	Private	Total	Public	Private
1972	216	252	170	591	335	256
1973	216	261	158	591	335	256
1974	199	244	142	596	336	260
1975	219	252	169	536	323	213
1976	201	231	156	535	322	213
1977	194	217	158	536	322	214
1978	183	213	140	562	331	231
1979	187	220	141	565	332	233
1980	198	233	148	563	332	231
1981	203	240	150	563	332	231
1982	182	201	154	563	332	231
1983	178	203	142	562	331	231
1984	174	n/a	n/a	561	n/a	n/a
1985	182	n/a	n/a	561	n/a	n/a
1986	194	n/a	n/a	561	n/a	n/a
1987	200	n/a	n/a	562	n/a	n/a

1/ See Appendix Table C18 for supporting data.

2/ From the National Science Foundation. For 1978 the number of doctorate-granting institutions was obtained from NSF; the number of master's-granting institutions was estimated by the committee. Beginning in FY 1984, data were collected from a sample of 400 institutions and inflated to produce universe estimates.

APPENDIX TABLE C20. Psychology R and D Expenditures in Colleges and Universities, by Type of Institutional Control, 1964-87

Fiscal Year	Current Dollars (millions) 1/			1972 Dollars (millions) 2/			Average R and D Expenditures per School (1972 $, thousands)3/		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
1964	31.904	n/a	n/a	43.884	n/a	n/a	n/a	n/a	n/a
1965	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1966	40.143	n/a	n/a	52.270	n/a	n/a	n/a	n/a	n/a
1967	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1968	59.286	n/a	n/a	71.775	n/a	n/a	n/a	n/a	n/a
1969	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1970	59.250	n/a	n/a	64.825	n/a	n/a	n/a	n/a	n/a
1971	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1972	69.025	46.015	23.010	69.025	46.015	23.010	117	137	90
1973	73.742	47.503	26.239	69.699	44.899	24.801	118	134	97
1974	74.236	48.920	25.316	63.997	42.172	21.824	107	126	84
1975	80.322	55.416	24.906	63.146	43.566	19.580	118	135	92
1976	77.883	51.871	26.012	58.165	38.739	19.426	109	120	91
1977	85.129	55.011	30.118	60.077	38.822	21.255	112	121	99
1978	89.664	57.453	32.211	58.970	37.786	21.184	105	114	92
1979	100.531	63.984	36.547	60.758	38.670	22.088	108	116	95
1980	111.084	71.920	39.164	62.260	40.309	21.950	111	121	95
1981	128.738	85.747	42.991	65.972	43.941	22.031	118	132	95
1982	132.272	86.374	45.898	63.937	41.751	22.186	115	126	96
1983	136.850	90.538	46.312	63.465	41.988	21.478	113	127	93
1984	144.712	93.470	51.241	64.768	41.834	22.934	115	n/a	n/a
1985	157.852	104.589	53.062	68.307	45.316	22.990	122	n/a	n/a
1986	169.543	111.541	58.002	71.525	47.056	24.469	127	n/a	n/a
1987	187.637	121.206	66.431	76.630	49.500	27.130	136	n/a	n/a

1/ Figures for even years from 1964-70 and for all years from 1972-87 were obtained from the National Science Foundation (1975-88). The 1978 figures are NSF estimates.
Items may not sum to totals due to rounding.

2/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census -- see Appendix Table A7). Items may not sum to totals due to rounding.

3/ See Appendix Table C19 for number of schools reporting.

APPENDIX TABLE C21. Sociology R and D Expenditures in Colleges and Universities, by Type of Institutional Control, 1964-87

Fiscal Year	Current Dollars (millions) 1/			1972 Dollars (millions) 2/			Average R&D Expenditures per School (1972 $, thousands) 3/		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
1964	14.864	n/a	n/a	20.171	n/a	n/a	n/a	n/a	n/a
1965	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1966	20.000	n/a	n/a	26.042	n/a	n/a	n/a	n/a	n/a
1967	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1968	38.587	n/a	n/a	46.715	n/a	n/a	n/a	n/a	n/a
1969	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1970	44.383	n/a	n/a	48.559	n/a	n/a	n/a	n/a	n/a
1971	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1972	57.983	37.822	20.161	57.983	37.822	20.161	96	113	79
1973	61.514	45.072	16.442	58.142	42.601	15.541	98	127	61
1974	63.447	46.054	17.393	54.696	39.702	14.994	92	118	58
1975	68.749	47.960	20.789	54.048	37.704	16.344	101	117	77
1976	66.239	47.720	18.519	49.469	35.639	13.830	92	111	65
1977	61.922	44.225	17.697	43.699	31.210	12.489	82	97	58
1978	66.900	49.857	17.043	43.999	32.790	11.209	78	99	49
1979	74.641	56.815	17.826	45.111	34.338	10.774	80	103	46
1980	87.992	66.025	21.967	49.317	37.005	12.312	88	111	53
1981	94.414	69.609	24.805	48.383	35.671	12.711	86	107	55
1982	79.821	51.927	27.894	38.583	25.100	13.483	69	76	58
1983	78.440	54.179	24.261	36.377	25.126	11.251	65	76	49
1984	74.030	47.754	26.276	33.133	21.373	11.760	59	n/a	n/a
1985	77.633	49.780	27.854	33.636	21.568	12.068	60	n/a	n/a
1986	87.857	55.665	32.192	37.064	23.483	13.581	66	n/a	n/a
1987	88.040	53.555	34.485	35.955	21.872	14.084	64	n/a	n/a

1/ Figures for even years from 1964-70 and for all years from 1972-87 were obtained from the National Science Foundation (1975-88). The 1978 figures are NSF estimates. Items may not sum to totals due to rounding.

2/ 1972 dollars were obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census--see Appendix Table A7). Items may not sum to totals due to rounding.

3/ See Appendix Table C19 for number of schools reporting.

APPENDIX TABLE C22. Graduate Enrollment in the Behavioral Sciences by Sex, 1967-88 (percent of field total) 1/

Fiscal Year	All Behavioral Sci.		Psychology		Sociology		Anthropology		Socio./Anthro. 2/		Speech.Path./ Audio.	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1967	68.4	31.6	70.2	29.8	66.8	33.2	62.3	37.7				
1968	67.0	33.0	67.6	32.4	67.6	32.4	61.6	38.4				
1969	64.9	35.1	66.2	33.8	64.4	35.6	58.6	41.4				
1970	64.1	35.9	65.6	34.4	63.4	36.6	57.2	42.8				
1971	62.6	37.4	63.5	36.5	62.6	37.4	57.8	42.2				
1972	59.9	40.1	63.4	36.6	61.9	38.1	58.3	41.7			22.6	77.4
1973	58.0	42.0	61.6	38.4	60.4	39.6	56.9	43.1			21.3	78.7
1974	55.8	44.2	60.1	40.0	59.6	40.4	54.0	46.0			20.8	79.2
1975	52.4	47.6	57.4	42.6	58.0	42.0	52.9	47.1			16.8	83.2
1976	50.3	49.7	55.2	44.8	56.4	43.6	52.9	47.1			15.6	84.4
1977	47.8	52.2	52.8	47.2	54.1	45.9	50.0	50.0			13.2	86.8
1978	49.4	50.6	53.1	46.9	54.5	45.5	50.3	49.7	64.4	35.6	23.0	77.0
1979	47.3	52.7	50.9	49.1	53.3	46.7	49.6	50.4	59.3	40.7	19.9	80.1
1980	45.2	54.8	48.8	51.2	52.0	48.0	48.9	51.1	53.6	46.4	16.9	83.1
1981	43.2	56.8	46.8	53.2	49.8	50.2	47.6	52.4	53.7	46.3	15.2	84.7
1982	40.7	59.3	44.0	56.0	48.4	51.6	45.6	54.4	49.0	51.0	13.8	86.2
1983	39.3	60.7	42.4	57.6	46.6	53.4	45.0	55.0	48.8	51.2	14.0	86.0
1984	38.0	62.0	40.6	59.4	47.0	53.0	43.2	56.8	48.8	51.2	13.4	86.6
1985	37.2	62.8	38.8	61.2	46.5	53.5	43.7	56.3	46.2	53.8	14.8	85.2
1986	36.5	63.5	37.7	62.3	47.1	52.9	44.7	55.3	44.8	55.2	14.4	85.6
1987	35.2	64.8	36.6	63.3	45.5	54.5	42.6	57.4	43.4	56.6	12.5	87.5
1988	35.2	64.8	37.1	62.9	44.8	55.2	43.8	56.2	44.9	55.1	10.1	89.9

1/ Percents for 1967-77 are based on figures from the U.S. Department of Education (1969-79). Those for 1978-88 based on figures from the National Science Foundation (1973-88). See Appendix Tables C1 and C4-8 for supporting data.

2/ This interdisciplinary field is reported separately from sociology and anthropology by the National Science Foundation.

APPENDIX TABLE C23. Graduate School Attrition Rates in the Behavioral Sciences, 1963-74

Fiscal Year of Graduate School Entry	First-Year Graduate Enrollment in the Behavl. Sci. 1/	Number of FY 1962-87 Behavioral Sci. Ph.D.s Entering Grad. School 2/	Ph.D. Completion Rate (%) 3/	Graduate School Attrition Rate (%) 3/
Pre-1963		16,636		
Post-1974		19,876		
1963	8,739	2,457	28.1	71.9
1964	9,288	2,918	31.4	68.6
1965	11,832	3,358	28.4	71.6
1966	13,659	3,797	27.8	72.2
1967	13,859	4,050	29.7	70.3
1968	15,966	4,017	25.2	74.8
1969	16,831	4,034	24.0	76.0
1970	19,501	4,551	23.3	76.7
1971	22,709	4,751	20.9	79.1
1972	24,607	4,797	19.5	80.5
1973	26,269	4,659	17.7	82.3
1974	27,636	4,356	15.8	84.2

1/From the U.S. Department of Education (1959-79).

2/From the National Research Council's Doctorate Records File (1958-88).

3/The Ph.D. completion rate represents the percentage of first-year graduate students in a given year who earned a Ph.D. between 1962 and 1987 (column 2/column 1). The attrition rate is obtained by subtracting the Ph.D. completion rate for a given year from 100.0%. The rates for 1960-64 are relatively constant (see 1985 Report), i that most individuals entering graduate school during that period had either received a Ph.D. or dropped out of graduate school by 1987. For later years, the Ph.D. completion rates decline with each year. The attrition rates for these years undoubtedly include students who are still enrolled in graduate school but who had not earned a Ph.D. by 1987, as well as those who had actually dropped out of graduate school. The median elapsec from baccalaureate to bioscience doctorate degree in 1987 was 8.1 years; it is therefore probable that many of t graduate students entering in years after 1980 are still working toward a doctorate degree. Completion and attriti rates have not been calculated for the later years. The Ph.D. completion rates will most likely increase and the a rates decrease once 1988 Ph.D.s are added to the calculations, and should continue to do so with the inclusion c each additional year of Ph.D.s.

APPENDIX TABLE D1. Estimates of the Total Population of the United States by Age Group, 1971-2081 (In thousands) 1/

Fiscal Year	Age Group		
	15-19 Years	20-24 Years	25-29 Years
1971	19,333	17,202	13,736
1972	19,789	18,159	14,041
1973	20,296	18,153	15,240
1974	20,719	18,521	15,766
1975	21,042	18,975	16,521
1976	21,285	19,527	17,280
1977	21,534	19,986	18,274
1978	21,540	20,499	18,277
1979	21,496	20,946	18,683
1980	21,402	21,297	19,178
1981	21,159	21,584	19,804
1982	20,556	21,821	20,306
1983	19,939	21,807	20,865
1984	19,313	21,700	21,321
1985	18,823	21,536	21,661
1986	18,587	21,214	21,892
1987	18,648	20,608	22,132
(Projected - Middle Series)			
1988	18,497	19,962	22,106
1989	18,248	19,374	22,008
1990	17,830	18,915	21,830
1991	17,418	18,689	21,511
1996	17,567	17,462	18,966
2001	19,112	17,800	17,736
2006	19,477	19,109	17,822
2011	18,839	19,453	19,310
2016	17,930	18,818	19,642
2021	17,842	17,931	19,020
2026	17,940	17,857	18,144
2031	18,278	17,962	17,878
2036	18,183	18,299	18,181
2041	17,769	18,208	18,516
2046	17,415	17,800	18,423
2051	17,304	17,450	18,013
2056	17,315	17,344	17,666
2061	17,235	17,361	17,564
2066	16,997	17,269	17,585
2071	16,737	17,059	17,515
2076	16,572	16,806	17,287
2081	16,460	16,647	17,036

1/ From the U.S. Bureau of the Census (1965-88). Includes armed forces overseas.

APPENDIX TABLE D2. NIH/ADAMHA/HRSA Expenditures for Research Training Programs, 1971-88 ($ millions)

	Total NIH/ADAMHA/HRSA						NIH 1/					ADAMHA 2/					HRSA, Division of Nursing 3/				
	Total Amount		Fellowships		Training Grants		Total Amount	Fellowships		Training Grants		Total Amount	Fellowships		Training Grants		Total Amount	Fellowships		Training Grants	
Fiscal Year	Current $	Constant 1972 $ 4/	No.	Amt.	No.	Amt.	Current $	No.	Amt.	No.	Amt.	Current $	No.	Amt.	No.	Amt.	Current $	No.	Amt.	No.	Amt.
1971	171.5	178.6	n/a	n/a	n/a	n/a	152.9	2,718	23.8	2,111	129.1	16.7	n/a	n/a	n/a	n/a	1.90	183	0.90	9	1.00
1972	178.1	178.1	n/a	n/a	n/a	n/a	157.6	2,264	21.5	2,024	136.1	19.2	n/a	n/a	n/a	n/a	1.30	146	0.60	9	0.70
1973	127.2	120.2	n/a	n/a	n/a	n/a	115.3	1,233	12.2	1,696	103.1	10.3	n/a	n/a	n/a	n/a	1.60	136	0.60	10	1.00
1974	207.9	179.2	n/a	n/a	n/a	n/a	186.5	2,267	30.6	2,922	155.9	20.1	n/a	n/a	n/a	n/a	1.30	115	0.60	9	0.70
1975	177.1	139.2	2,657	34.1	1,979	143.0	156.8	2,056	27.8	1,739	129.0	19.7	570	6.1	232	13.6	0.60	31	0.20	8	0.40
1976	141.6	105.7	2,107	27.9	1,570	113.7	122.0	1,652	23.2	1,339	98.8	19.4	414	4.6	230	14.6	0.16	41	0.08	1	0.08
1977	150.6	106.3	2,389	31.2	1,436	119.4	131.6	1,975	27.3	1,210	104.3	18.2	318	3.3	223	14.9	0.80	96	0.60	3	0.20
1978	166.4	109.4	2,423	32.8	1,560	133.6	148.5	2,070	29.7	1,330	118.8	16.9	231	2.3	227	14.6	1.00	122	0.80	3	0.20
1979	167.5	101.2	2,539	34.9	1,475	132.6	149.3	2,208	31.8	1,265	117.5	17.2	219	2.3	207	14.9	1.00	112	0.80	3	0.20
1980	203.8	114.2	2,258	42.4	1,728	161.4	182.8	1,973	38.9	1,515	143.9	20.0	190	2.8	210	17.2	0.99	95	0.70	3	0.30
1981	203.5	104.3	2,072	39.4	1,570	164.1	181.7	1,752	35.5	1,369	146.2	20.8	205	3.0	200	17.8	0.99	115	0.90	1	0.10
1982	174.4	84.3	1,997	34.2	1,474	140.1	156.3	1,726	31.2	1,294	125.1	17.1	151	2.1	180	15.0	0.96	120	0.90	0	0.00
1983	189.2	87.7	2,023	37.6	1,520	151.5	171.1	1,756	34.4	1,340	136.7	17.1	155	2.3	180	14.8	0.96	112	0.90	0	0.00
1984	191.4	85.6	2,047	37.9	1,533	153.5	173.2	1,759	34.4	1,360	138.8	17.2	171	2.5	173	14.7	0.96	117	1.00	0	0.00
1985	245.7	106.4	2,313	51.3	1,527	195.4	223.9	1,985	46.4	1,356	177.5	20.8	162	2.9	171	17.9	0.96	166	2.00	n/a	n/a
1986	237.0	100.0	1,986	45.7	1,498	191.3	217.2	1,823	42.8	1,334	174.4	19.8	163	2.9	164	16.9					
1987	262.3	107.1	2,240	50.0	1,552	212.3	238.7	2,032	46.6	1,372	192.1	23.6	208	3.4	180	20.2					
1988							245.6	1,944	45.0	1,404	200.6										

1/ From NIH (1966-87, 1988 edition and pre-publication data). Includes MARC Honors Undergraduate trainees.

2/ Figures for 1971-74 were obtained from ADAMHA (1978-81, 1980 edition, p. 33); figures for 1975-87 were from special tabulations prepared annually by ADAMHA, Office of the Administrator. Includes MARC Honors Undergraduate trainees.

3/ From HRSA, Division of Nursing, and NCNR. Figures for 1971-76 represent Special Nurse Research Fellowship and Nurse Scientist Training Grant Programs. Figures for 1977-85 were obtained from HRSA, Division of Nursing. Authority for NRSA research training programs in the Division of Nursing began in FY 1977; the program was transferred to NCNR/NIH in FY 1986. As a result, nursing research training awards are included in NIH training award data beginning with 1986. The 1988 NIH Data Book indicates that NCNR research training awards (in millions) were $1.0 in 1986 and $2.1 in 1987.

4/ Obtained by using the Implicit GNP Price Deflator (U.S. Bureau of the Census -- see Appendix Table A7).

APPENDIX TABLE D3. NRSA Training Expenditures as a Percentage of NIH/ADAMHA/HRSA Research Obligations, 1971-88 ($ millions) 1/

	Total NIH/ADAMHA/HRSA			NIH 2/			ADAMHA 3/			HRSA, Division of Nursing 4/		
Fiscal Year	Research $	Training $	% of Research $	Research $	Training $	% of Research $	Research $	Training $	% of Research $	Research $	Training $	% of Research $
1971	960.7	171.8	17.9	842.7	152.9	18.1	116.0	16.7	14.4	2.0	1.90	95.0
1972	1,173.8	178.1	15.2	1,041.1	157.6	15.1	130.3	19.2	14.7	2.4	1.30	54.2
1973	1,205.6	127.2	10.6	1,081.4	115.3	10.7	121.7	10.3	8.5	2.5	1.60	64.0
1974	1,607.2	207.9	12.9	1,449.3	186.5	12.9	155.3	20.1	12.9	2.6	1.30	50.0
1975	1,679.4	177.1	10.5	1,536.9	156.8	10.2	139.1	19.7	14.2	3.4	0.60	17.6
1976	1,854.2	141.6	7.6	1,678.2	122.0	7.3	173.2	19.4	11.2	2.8	0.16	5.7
1977	1,966.0	150.6	7.7	1,808.2	131.6	7.3	152.8	18.2	11.9	5.0	0.80	16.0
1978	2,201.0	166.4	7.6	2,034.7	148.5	7.3	161.3	16.9	10.5	5.0	1.00	20.0
1979	2,562.6	167.5	6.5	2,361.7	149.3	6.3	196.0	17.2	8.8	4.9	1.00	20.4
1980	2,759.0	203.8	7.4	2,542.3	182.8	7.2	211.7	20.0	9.4	5.0	1.00	20.0
1981	2,872.6	203.5	7.1	2,660.9	181.7	6.8	206.7	20.8	10.1	5.0	1.00	20.0
1982	2,916.6	174.5	6.0	2,710.7	156.3	5.8	202.5	17.2	8.5	3.4	1.00	29.4
1983	3,244.7	189.2	5.8	3,006.5	171.1	5.7	233.2	17.1	7.3	5.0	1.00	20.0
1984	3,687.9	191.3	5.2	3,405.9	173.2	5.1	273.1	17.2	6.3	8.9	0.90	10.1
1985	4,247.6	247.0	5.8	3,930.0	224.0	5.7	308.3	20.8	6.7	9.3	2.20	23.7
1986	4,372.5	236.9	5.4	4,043.4	217.1	5.4	329.1	19.8	6.0			
1987	5,227.8	262.5	5.0	4,816.5	238.8	5.0	411.3	23.7	5.8			
1988	n/a	n/a	n/a	5,166.9	245.7	4.8	n/a	n/a	n/a			

1/ Research obligations represent grants and contracts.

2/ From NIH Data Book (1982-88 editions, and pre-publication data).

3/ From ADAMHA (1978-83, FY 1980-87 editions).

4/ Extracted from annual reports provided by HRSA, Division of Nursing, and NIH Data Book. Authority for nursing research training was transferred from HRSA to NCNR/NIH in 1986. As a result, nursing research and training data are included with other NIH research and training awards beginning in 1986. The 1988 NIH Data Book shows NCNR R&D Grants and R&D Contracts (in millions) of some $20.6 in 1986 and $33.1 in 1987. Training awards (in millions) by NCNR amounted to $1.0 in 1986 and $2.1 in 1987; training expenditures as a percentage of research obligations are, therefore, 4.9% and 6.3% for 1986 and 1987, respectively.

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